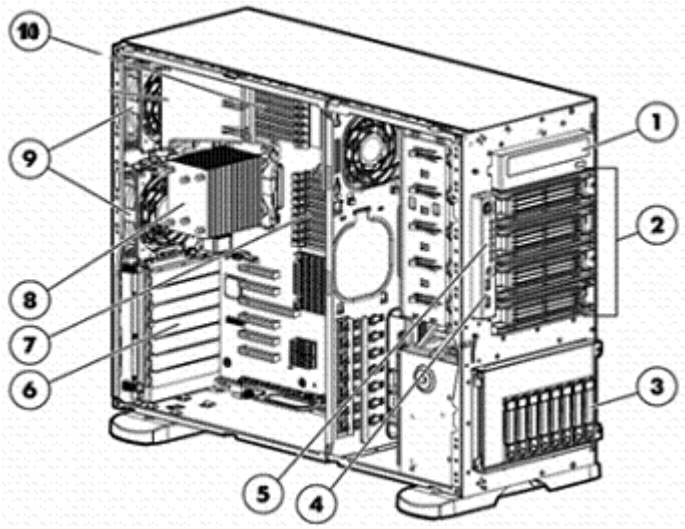
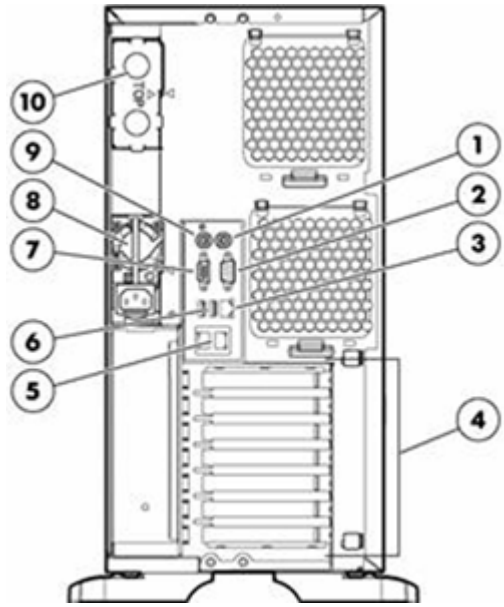
Overview

The HP ProLiant ML350 G6 is the best price-performance, dual-processor Tower server that delivers excellence with performance, expandability and availability. The G6 server has more memory capacity and HDD expandability than previous generations. It combines the latest Intel Xeon 5600 processors with QPI technology, best-in-class availability features, and unsurpassed flexibility in a system ideal for growing businesses and especially well suited to meet the needs of remote branch offices.





Front View:

1. SATA DVD ROM or DVD RW optical drive
2. Four (4) removable media bays
3. Eight (8) 2.5" (shown) or six (6) 3.5" SAS or SATA hot plug drive bays
4. Two (2) USB ports
5. LEDs: System power, Health, Power cap, NIC 1&2, UID
6. Six (6) expansion slots
7. Nine (9) DIMM slots (Processor 2): DDR3 Registered (RDIMM) or Unbuffered (UDIMM) memory
8. Processor heatsink
9. Three (3) system fans
10. Nine (9) DIMM slots (Processor 1): DDR3 Registered (RDIMM) or Unbuffered (UDIMM) memory

Rear View:

1. PS/2 mouse port
2. Serial port
3. Dedicated remote management port
4. Six (6) expansion slots
5. Two (2) network ports
6. Two (2) USB ports
7. Video port
8. Power supply bay 1
9. PS/2 keyboard port
10. Power supply bay 2

Standard Features

NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.

Processor
One of the following depending on Model

Six-Core Processors

Intel® Xeon® X5675 (3.06GHz/6-core/12MB/95W, DDR3-1333, HT, Turbo 1/1/2/2/3/3) Processor
Intel® Xeon® X5670 (2.93GHz/6-core/12MB/95W, DDR3-1333, HT, Turbo 1/1/2/2/3/3) Processor
Intel® Xeon® X5660 (2.80GHz/6-core/12MB/95W, DDR3-1333, HT, Turbo 1/1/2/2/3/3) Processor
Intel® Xeon® X5650 (2.66GHz/6-core/12MB/95W, DDR3-1333, HT, Turbo 1/1/2/2/3/3) Processor
Intel® Xeon® E5649 (2.53GHz/6-core/12MB/80W, DDR3-1333, HT, Turbo 1/1/2/2/3/3) Processor
Intel® Xeon® E5645 (2.40GHz/6-core/12MB/80W,DDR3-1333, HT, Turbo 1/1/2/2/3/3) Processor

Quad-Core Processors

Intel® Xeon® X5672 (3.20GHz/4-core/12MB/95W,DDR3-1333, HT, Turbo 1/1/2/2/3/3) Processor
Intel® Xeon® E5640 (2.66GHz/4-core/12MB/80W, DDR3-1066, HT, Turbo 1/1/2/2) Processor
Intel® Xeon® E5630 (2.53GHz/4-core/12MB/80W, DDR3-1066, HT, Turbo) Processor
Intel® Xeon® E5620 (2.40GHz/4-core/12MB/80W, DDR3-1066, HT, Turbo) Processor
Intel® Xeon® E5603 (2.00GHz/2-core/4MB/80W, DDR3-1333, HT, Turbo 1/1/2/2/3/3) Processor
Intel® Xeon® X5570 (2.93GHz/4-core/8MB/95W, DDR3-1333, HT, Turbo 2/2/3/3) Processor
Intel® Xeon® X5560 (2.80GHz/4-core/8MB/95W, DDR3-1333, HT, Turbo 2/2/3/3) Processor
Intel® Xeon® X5550 (2.66GHz/4-core/8MB/95W, DDR3-1333, HT, Turbo 2/2/3/3) Processor
Intel® Xeon® E5540 (2.53GHz/4-core/8MB/80W, DDR3-1066, HT, Turbo 1/1/2/2) Processor
Intel® Xeon® E5530 (2.40GHz/4-core/8MB/80W, DDR3-1066, HT, Turbo 1/1/2/2) Processor
Intel® Xeon® E5520 (2.26GHz/4-core/8MB/80W, DDR3-1066, HT, Turbo 1/1/2/2) Processor
Intel® Xeon® E5607 (2.26GHz/4-core/4MB/80W, DDR3-1333, HT, Turbo 1/1/2/2/3/3) Processor
Intel® Xeon® E5506 (2.13GHz/4-core/4MB/80W, DDR3-800) Processor
Intel® Xeon® E5504 (2.00GHz/4-core/4MB/80W, DDR3-800) Processor
Intel® Xeon® L5630 (2.13GHz/4-core/12MB/40W, DDR3-1066, HT, Turbo 1/1/2/2) Processor
Intel® Xeon® L5520 (2.26GHz/4-core/8MB/60W, DDR3-1066, HT, Turbo 1/1/2/2) Processor
Intel® Xeon® L5506 (2.13GHz/4-core/4MB/60W, DDR3-800) Processor

Dual-Core Processors

Intel® Xeon® E5503 (2.0GHz/2-core/4MB/80W, DDR3-800) Processor
Intel® Xeon® E5502 (1.86GHz/2-core/4MB/80W, DDR3-800) Processor

NOTE: HT indicates that the processor model supports Intel® Hyper-Threading Technology.
NOTE: Turbo indicates the maximum potential frequency increment when using Intel® Turbo Boost Technology, with 4, 3, 2, and 1 cores active.
NOTE: DDR3 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.
NOTE: For the Intel 5600 and 5500 Series, the letter preceding the model number indicates the performance/wattage of the processor. "X" denotes High Performance/Wattage; "E" denotes Enterprise Performance/Wattage (Mainstream); and "L" denotes Lower Wattage.
NOTE: Customers transitioning from 5500 series processors to 5600 series processors must include a third fan along with the two fans present on the server

Standard Features

Cache Memory One of the following depending on Model	12MB (1 x 12MB) Level 3 cache NOTE: For 5600 series processors (other than those indicated below) 8MB (1 x 8MB) Level 3 cache NOTE: For E5606/E5607/X5570/X5560/X5550/E5540/E5530/E5520/L5520 processors 4MB (1 x 4MB) Level 3 cache NOTE: For E5603/E5507/E5506/E5504/E5503/E5502/L5506 processors
Chipset	Intel® 5520 Chipset NOTE: For more information regarding Intel® chipsets, please see the following URL: http://www.intel.com/products/server/chipsets/.
Upgradeability	Upgradeable to two processors NOTE: total 4, 8 or 12 cores
Memory Protection	Advanced ECC Mirroring mode Lock-step mode Online Spare (Requires X5600 or E5600 processor family)

Memory
One of the following depending on model

Type	DDR3 Registered (RDIMM) or Unbuffered (UDIMM)
Standard (Performance Models)	12 GB (6 x 2 GB) RDIMM
Standard (Base Models)	6 GB (3 x 2 GB) RDIMM
Standard (Entry Models)	4 GB (2 x 2 GB) RDIMM
Standard (Entry Models)	4 GB (1 x 4 GB) RDIMM
Maximum (RDIMM)	288 GB (18 x 16 GB) RDIMM
Maximum (UDIMM)	48 GB (12 x 4 GB)

NOTE: Depending on the memory configuration and processor model, the memory speed may run at 1333MHz, 1066MHz, or 800MHz. Please see the Online Memory Configuration Tool at: www.hp.com/go/ddr3memory-configurator.

NOTE: The 16 GB memory module is a quad ranked 800MHz DDR3 memory.

Network Controller	Embedded NC326i PCI Express Dual Port Gigabit Server Adapter

Standard Features

Expansion Slots

Expansion Slot #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
6	PCI Express Gen2	x4	x8	5	Standard Height/Length	
5	PCI Express Gen2	x4	x8	8	Standard Height/Length	
4	PCI Express Gen2	x8	x16	11	Standard Height/Length	
3	PCI Express Gen2	x8	x8	14	Standard Height/Length	
2	PCI Express Gen2	x4	x8	17	Standard Height/Length	
1	PCI Express Gen2	x4	x8	20	Standard Height/Length	

NOTE: Bus number - Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number

NOTE: Indicates the number of physical electrical lanes running to the connector.

NOTE: Six total expansion slots. One PCI-Express x16 Gen2 (x8 speed); One PCI-Express x8 Gen2 (x8 speed); Four PCI-Express x8 Gen2 (x4 speed). Optional PCI-X Expander provides additional two 64-bit/100-MHz PCI-X slots by using a single PCI Express slot.

Storage Controller
One of the following depending on model

Entry Models	Embedded HP Smart Array P410i/Zero Memory Controller (RAID 0/1/1+0)
Base Models	Embedded HP Smart Array P410i/256MB Controller (RAID 0/1/1+0/5/5+0)
	Embedded HP Smart Array P410i/512 MB BBWC Controller (RAID 0/1/1+0/5/5+0)
Performance Models	Embedded HP Smart Array P410i/1GB FBWC Controller

Available upgrades: 256MB, 512MB with BBWC, Battery kit upgrade (for BBWC), and Smart Array Advanced Pack (SAAP)

Internal Storage Devices

Diskette Drive	None included standard (not supported)
Optical Drives	HP Half-Height SATA DVD-ROM Optical Drive
Hard Drives	None standard

Maximum Internal Storage
One of the following depending on model

Hot Plug LFF SAS	8TB	8 x 1TB
Hot Plug LFF SATA	16TB	8 x 2TB
Hot Plug SFF SAS	16TB	16 x 1GB
Hot Plug SFF SATA	16TB	16 x 1GB

Standard Features

Interfaces	Serial	1
	Network RJ-45	3 (1 dedicated for HP Integrated Lights-Out 2 (iLO2)
	Keyboard	1
	Pointing Device (Mouse)	1
	Graphics	1
	SD slot	1 (internal)
	USB 2.0 Ports	6 (2 front, 2 rear, 2 internal) NOTE: Please see the following URL for additional information regarding USB support: http://h18004.www1.hp.com/products/servers/platforms/usb-support.html.

Industry Standard Compliance	ACPI V2.0 Compliant PCI-Express Gen2 PXE Support WOL Support PCI-X 1.0a Compliant Novell Certified Microsoft® Logo certifications USB 2.0 Support SMBIOS 2.6.1

Server Power Cords	ProLiant ML servers in a rack-mount configuration no longer ship standard with NEMA power cords that allow connection to 110V US wall outlets in a home or office. These servers are primarily connected to PDU's in data center racks so they now ship standard with only a PDU power cord (416151-B21). If a user wishes to power a ProLiant ML rack-mount server using a 110V receptacle (NEMA-15), the NEMA power cord must be ordered separately. The 12' cord (AF556A) or 6' cord (187335-001) can be purchased online at HP.COM. In a tower configuration, the servers ship standard with a 6' NEMA power cord. If customers require a power cord, they can check the power cord matrix for the appropriate sku. Please see the following power cord matrix: http://www.hp.com/go/powercordmatrix.

Standard Features

Common Slot Power Supplies

HP has a new design for ProLiant power- the new Common Slot Power Supply bay. This design provides the customer with commonality in power supplies across multiple platforms to save on the cost of spares and allows HP to offer multiple power solutions to fit the customers' needs. Many HP ProLiant Servers come with Common Slot, High Efficiency and Right-Size Power Supplies. The new HP Common Slot power supplies are designed for the highest power efficiency without degrading performance of the ProLiant server. Power Supplies have efficiency ratings up to 92%. There are three Right Size power options available depending on the configuration of your server. To make sure you select the correct power supply to meet your configuration, please use the HP Power Advisor at: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor. All HP Common Slot power sources are UL, CE Mark Compliant, Hot Plug and Redundant.

It is highly recommended that you use the HP Power Advisor in defining the "Right-Size" power supply for your needs.

The HP ProLiant Common Slot Power supplies meet multiple Energy Efficiency Initiatives: Climate Savers Computing Initiative GOLD and ECOS Consulting 80PLUS GOLD for the 460w and 750w Power Supplies and Climate Savers Computing Initiative Silver, ECOS Consulting 80PLUS Silver for 1200w Power Supply. HP has also been working with the EPA on developing an ENERGY STAR? Computer Server specification and plans on offering models that meet the requirements when they are published. Please visit the ENERGY STAR website at www.energystar.gov for updates on the specification development process and approved platforms.
The HP Power Advisor is located at: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor

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System Fans

3 system fans ship standard
NOTE: Does not include power supply or processor heat sink fans. Processor heat sink fans packed in processor kit.
N+1 fan redundancy standard

Required Cabling

For required cabling information, refer to the HP ProLiant ML350 G6 cabling matrix at: http://www.hp.com/servers/proliantML350.
NOTE: Please see the "Storage" section of this QuickSpecs for important information on controllers and cables required to support SAS or SATA hard drives as well as storage management software available for SATA hard drives.

Operating Systems and Virtualization Software Support for ProLiant Servers

Microsoft Windows Server
Red Hat Enterprise Linux (RHEL)
SUSE Linux Enterprise Server (SLES)
NetWare
NOTE: NetWare support on Intel Xeon 5500 family only.
VMware
HP Citrix Essentials for XenServer

NOTE: For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: http://www.hp.com/go/ossupport and our driver download page www.hp.com/support/ML350G6.

Standard Features

Graphics	Integrated ATI RN50, 64MB video standard • 16 bit color: maximum resolution of 1600 x 1200 • 32 bit color: maximum resolution of 1280 x 1024 NOTE: Maximum resolution available via iLO remote console is 1280 x 1024.	
Form Factor	Tower or Rack (5U) NOTE: Rack models (with a Tower to Rack conversion kit) support: • Square or round hole racks 24"- 36" deep, including HP Rack System /E and HP Systems • Telco racks with 3rd part option kit from Rack Solutions http://www.racksolutions.com/hp	
HP Insight Management Control Software	HP Insight Foundation	Managing the growing number of servers can be complex and expensive for your organization. IT managers need to address changing business needs with tools that meet the challenges of managing today's complex Datacenters. HP provides management solutions that are designed to simplify a server's installation, configuration and maintenance throughout the entire server lifecycle. This provides the customer with higher levels of operational efficiency and highly reliable systems: http://www.hp.com/go/foundation The foundation pack includes: • HP SmartStart • HP Management DVD • HP ProLiant Smart Update Firmware DVD NOTE: In an effort to support reducing our environmental impact, the HP Insight Foundation Suite for ProLiant media will be available as a selectable option for this server at time of order of a CTO SKU. This will allow customers to order the number of media kits that best meet their needs and eliminate receiving unnecessary duplicate media.
	HP Integrated Lights-Out (iLO)	HP Integrated Lights-Out (iLO) simplifies server setup, health monitoring, power and thermal control, and lights-out remote administration of ProLiant ML, DL, and BL servers. HP iLO functions without additional software and can be accessed from any location via a web browser. HP iLO works hand-in-hand with HP Systems Insight Manager, Insight Control suites, and Insight Dynamics for ProLiant, helping customers unleash the value of the ProLiant platform and deliver the highest possible quality of IT service. For more information, visit: www.hp.com/go/iLO

Standard Features

Intelligent Manageability	HP Systems Insight Manager SmartStart Redundant ROM System Firmware Update ROMPaq ProLiant RBSU (ROM-Based Setup Utility) Automatic Server Recovery-2 (ASR-2) Dynamic Sector Repairing (with Smart Array Controller) Drive Parameter Tracking (with Smart Array Controller) Pre-Failure Warranty (covers processors, memory, and SAS hard drives)
Security	Power-on password Setup password Serial interface control Disk configuration lock Power switch security
Warranty	This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details. NOTE: Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have HP replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at: http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html

Optional Features

HP Insight Management Software	HP Insight Control	HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console. Two versions of Insight Control are available, to serve environments requiring either a Linux-based or a Windows-based central management server: HP Insight Control for Linux, and HP Insight Control. See www.hp.com/go/insightcontrol HP Insight Control includes one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, please visit: http://www.hp.com/services/insight.
	HP Insight Dynamics	HP Insight Dynamics for ProLiant, a product option, is advanced infrastructure management software that enables IT staff to instantly adjust their environments to meet dynamic business demands by provisioning, optimizing and protecting complex infrastructure in minutes. It's a powerful toolkit, integrated-by-design, that accelerates complex technology projects and simplifies daily operations, transforming data center economics. With Insight Dynamics IT professionals can plan capacity and power continuously, balance workloads across physical and virtual resources, and ensure cost-effective high availability. It also enables IT organizations to provision infrastructure consistently and automatically from pools of shared resources using a self-service portal. Resources provisioned can range from a single virtual machine to complex multi-tier environments and their associated physical and virtual resource requirements. In addition to the previous functional benefits, it also provides a cost-effective disaster recovery for physical and virtual environments that works with HP StorageWorks Continuous Access software for both the Enterprise Virtual Array and the XP storage array allowing application environments to be reactivated in minutes with the touch of a button to a remote location. NOTE: For more information, visit: http://www.hp.com/go/insightdynamics
HPC Interconnects	NOTE: High Performance Computing (HPC) interconnect technologies are available for this server under the HP Cluster Platform product portfolio. These high-speed interconnects are fully supported by HP when they are part of these configure to order clusters. Solutions can be defined with a lot of flexibility with the help of configuration tools. Please visit the following URL to configure HPC Clusters with InfiniBand Interconnects: http://www.hp.com/techservers/clusters/ucp/index.html	
	InfiniBand	PCI-Express Generation 2 adapters

Optional Features

Factory Express Portfolio for Servers and Storage

HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed.

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSAxxxx, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

For more information on Factory Express services for your specific server model please contact your sales representative or go to: http://www.hp.com/go/factory-express.

HP Enterprise Configurator

The HP eConfigure Enterprise Configurator now provides factory default racking for our HP hardware portfolio. This approach is aligned with our strategic direction to meet the needs and expectations of our valued customers. If you require "custom" rack configuration, please contact HP's Customer Business Center or an Authorized Partner for assistance. For additional information please visit: http://www.hp.com/products/configurator

300 Series Servers

Service and Support

HP Technology Services for Industry Standard Servers and BladeSystem
Capitalizing on HP ProLiant server and HP BladeSystem capabilities requires a service partner who understands your increasingly complex business technology environment. That's why it makes sense to team up with the people who know HP infrastructure hardware and software best - the experienced professionals at HP Services.

What HP ProLiant and BladeSystem Services can do for you
HP ProLiant and BladeSystem Services can help you design, deploy, test, integrate, support, and manage IT and infrastructure solutions. This way, HP proposes services solutions that include more than just uplift of base warranty. You can get the support you need by choosing from one of a number of service packaged solutions we have designed to address wider set of customer support needs:.

HP Technology Services meets business challenges with services offered in three packages - Optimized Care Package, Standard Care Package, and Basic Care Package - available for each product group. Such packaged solutions enable customers to optimize technology operations, minimize risk and drive better business outcomes with easy-to-buy, easy-to-use scalable support packages for servers, storage, networking and software.

Optimized Care Package

Supports maintaining servers at optimum performance availability

HP ProLiant Server Hardware Installation
Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner
http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN

HP Installation and Startup for Insight Control Software
Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers
http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf

3-Year HP Critical Advantage
Provides end-to-end infrastructure support solution for business critical applications running on virtualized/x86 infrastructures, enabling the customers to cost effectively build, operate, and continuously improve their IT environment
http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=4AA3-1772ENW

Additional Services: Microsoft or Linux or VMware education courses + Facility & technology environmental assessment services + Energy Efficiency Design, Factory Express

Standard Care Package

Package that maintains high level of server availability

HP ProLiant Server Hardware Installation
Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner
http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN

HP Installation and Startup for Insight Control Software
Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers
http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf

3-Year HP 6 hour Hardware Support Onsite Call-to-Repair Service

Service and Support

	Provides an IT manager with a team of support specialists who will quickly begin troubleshooting the system to help return the hardware to operating condition within 6 hours of the initial service request to the HP Global Solution Center http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EN.pdf 3-Year , HP 24x7 Software Support for Insight Control Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6645EEE.pdf Additional Services - Software OS (Microsoft, Linux (SUSE/Red Hat) & VMware Installation & Start Up, and Software Support; Install and Startup Services for Insight Control; Microsoft or Linux or VMware education courses; +30 Proactive Select Credits, Factory Express
Basic Care Package	Delivers minimum recommended support service level HP ProLiant Server Hardware Installation Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN HP Installation and Startup for Insight Control Software Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf 3-Year HP 24x7 4 hour Response, Hardware Support Onsite Service Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf 3-Year , HP 24x7 Software Support for Insight Control Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6645EEE.pdf Additional Services: Software OS (Microsoft, Linux (SUSE/Red Hat) & VMware Installation & Start Up and Software Support); +10 Proactive Select Credits, Factory Express
Insight Remote Support	The packages include HP Insight Remote Support that uses proven technology to deliver secure, reliable 24x7 remote monitoring, diagnoses, and problem resolution. It is available at no additional cost to all warranty, HP Care Pack Service, and service agreement customers.
For more information	To learn more on HP ProLiant servers and HP BladeSystem servers, please contact your HP sales representative or HP Authorized Channel Partner. Or visit: http://www.hp.com/services/proliant

Pre-configured Models

NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.
NOTE: Pre-configured models ship with the configurations below. Options can be selected from the Core or Additional options section of this QuickSpecs.
NOTE: HP does not allow factory integration of options into pre-configured models. Any additional options purchased will be shipped separately.
NOTE: If you desire a custom configuration please see "Configuration Information - Factory Integrated Models" section of this QuickSpecs.

Entry Models

HP ProLiant ML350 G6 E5504 1P 4GB-R P410i/ZM 460W RPS Tower Server
487932-001

Processor	(1) Intel® Xeon® E5504 (2.00GHz/4-core/4MB/80W, DDR3-800) Processor
Cache Memory	4MB (1 x 4MB) L3 cache
Memory	4GB (2 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
Network Controller	Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
Storage Controller	HP Smart Array P410i/Zero Memory Controller
Hard Drive	None ship standard
Internal Storage	(6) LFF SATA/SAS HDD bays; upgradeable to (8) in total
Optical Drive	HP Half-Height SATA DVD-ROM Optical Drive
Power Supply	(1) 460 Watt Hot-Plug (Redundancy enabled) power supply
Fans	3 fans ship standard
Accessories	PS/2 Keyboard and Mouse ship standard
Form Factor	Tower (5U)
Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response

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HP ProLiant ML350 G6 E5606 1P 4GB-R P410i/ZM 460W RPS LFF Tower Server
638180-001

Processor	(1) Intel® Xeon® E5606 (2.13GHz/4-core/4MB/80W, DDR3-1333, HT, Turbo 1/1/2/2/3/3) Processor
Cache Memory	8MB (1 x 8MB) L3 cache
Memory	4GB (1 x 4GB) PC3-10600R (DDR3-1333) Registered DIMMs
Network Controller	Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
Storage Controller	HP Smart Array P410i/Zero Memory Controller
Hard Drive	None ship standard
Internal Storage	(6) LFF SATA/SAS HDD bays; upgradeable to (8) in total
Optical Drive	HP Half-Height SATA DVD-ROM Optical Drive
Power Supply	(1) 460 Watt Hot-Plug (Redundancy enabled) power supply
Fans	3 fans ship standard
Accessories	PS/2 Keyboard and Mouse ship standard
Form Factor	Tower (5U)
Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response

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Pre-configured Models

Base Models

HP ProLiant ML350 G6 E5645 1P 6GB-R P410i/256 750W RPS SFF Server 638181-001	Processor	(1) Intel® Xeon® E5645 (2.40GHz/6-core/12MB/80W, DDR3-1333, HT, Turbo 1/1/2/2/3/3) Processor
	Cache Memory	12MB (1 x 12MB) L3 cache
	Memory	6GB (3 x 2GB) PC3-10600 (DDR3-1333) Registered DIMMs
	Network Controller	Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
	Storage Controller	Embedded HP Smart Array P410i/256MB Controller
	Hard Drive	None ship standard
	Internal Storage	(8) SFF SAS/SATA HDD Bays; upgradeable to (16)
	Optical Drive	HP Half-Height SATA DVD-ROM Optical Drive
	Power Supply	(1) 750 Watt Hot-Plug (Redundancy enabled) power supply
	Fans	3 fans ship standard
	Accessories	PS/2 Keyboard and Mouse ship standard
	Form Factor	Tower (5U)
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response

HP ProLiant ML350 G6 E5520 1P 6GB-R P410i/256 750W RPS Tower Server 487930-001	Processor	(1) Intel® Xeon® E5520 (2.26GHz/4-core/8MB/80W, DDR3-1066, HT, Turbo 1/1/2/2) Processor
	Cache Memory	8MB (1 x 8MB) L3 cache
	Memory	6GB (3 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
	Network Controller	Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
	Storage Controller	Embedded HP Smart Array P410i/256MB Controller
	Hard Drive	None ship standard
	Internal Storage	(8) SFF SAS/SATA HDD Bays; upgradeable to (16)
	Optical Drive	HP Half-Height SATA DVD-ROM Optical Drive
	Power Supply	(1) 750 Watt Hot-Plug (Redundancy enabled) power supply
	Fans	3 fans ship standard
	Accessories	PS/2 Keyboard and Mouse ship standard
	Form Factor	Tower (5U)
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response

Pre-configured Models

HP ProLiant ML350 G6 E5520 1P 6GB-R P410i/256 750W RPS Rack Server 487931-001	Processor	(1) Intel® Xeon® E5520 (2.26GHz/4-core/8MB/80W, DDR3-1066, HT, Turbo 1/1/2/2) Processor
	Cache Memory	8MB (1 x 8MB) L3 cache
	Memory	6GB (3 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
	Network Controller	Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
	Storage Controller	Embedded HP Smart Array P410i/256MB Controller
	Hard Drive	None ship standard
	Internal Storage	(8) SFF SAS/SATA HDD Bays; upgradeable to (16)
	Optical Drive	HP Half-Height SATA DVD-ROM Optical Drive
	Power Supply	(1) 750 Watt Hot-Plug (Redundancy enabled) power supply
	Fans	3 fans ship standard
	Form Factor	Rack (5U)
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response

HP ProLiant ML350 G6 E5620 1P 6GB-R P410i/256 460W RPS Tower Server 594869-001	Processor	(1) Intel® Xeon® E5620 (2.40GHz/4-core/12MB/80W, DDR3-1066, HT, Turbo (1/1/2/2) Processor
	Cache Memory	12MB (1 x 12MB) L3 cache
	Memory	6GB (3 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
	Network Controller	Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
	Storage Controller	Embedded HP Smart Array P410i/256MB Controller
	Hard Drive	None ship standard
	Internal Storage	(8) SFF SAS/SATA HDD Bays; upgradeable to (16)
	Optical Drive	SATA DVD ROM
	Power Supply	(1) 460 Watt Hot-Plug (Redundancy enabled) power supply
	Fans	3 fans ship standard
	Accessories	PS/2 Keyboard and Mouse ship standard
	Form Factor	Tower (5U)
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response

Pre-configured Models

Performance Models

HP ProLiant ML350 G6 E5530 2P 12GB-R P410i/512 BBWC 750W RPS Tower Server 487928-001	Processor	(1) Intel® Xeon® E5530 (2.40GHz/4-core/8MB/80W, DDR3-1066, HT, Turbo 1/1/2/2) Processor
	Cache Memory	8MB (1 x 8MB) L3 cache
	Memory	12 GB (6 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
	Network Controller	Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
	Storage Controller	Embedded HP Smart Array P410i/512MB with BBWC
	Hard Drive	None ship standard
	Internal Storage	2.4 TB SFF(2.5-inch) SAS 2.0 TB SFF(2.5-inch) SATA
	Optical Drive	HP Half-Height SATA DVD-ROM Optical Drive
	Power Supply	(2) 750 Watt Hot-Plug Redundant power supplies
	Fans	4 fans ship standard
	Accessories	PS/2 Keyboard and Mouse ship standard
	Form Factor	Tower (5U)
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response

HP ProLiant ML350 G6 E5530 2P 12GB-R P410i/512 BBWC 750W RPS Rack Server 576778-001	Processor	(2) Intel® Xeon® E5530 (2.40GHz/4-core/8MB/80W, DDR3-1066, HT, Turbo 1/1/2/2) Processors
	Cache Memory	8MB (1 x 8MB) L3 cache
	Memory	12 GB (6 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
	Network Controller	Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
	Storage Controller	Embedded HP Smart Array P410i/512MB with BBWC
	Hard Drive	None ship standard
	Internal Storage	2.4 TB SFF(2.5-inch) SAS 2.0 TB SFF(2.5-inch) SATA
	Optical Drive	HP Half-Height SATA DVD-ROM Optical Drive
	Power Supply	(2) 750 Watt Hot-Plug Redundant power supplies
	Fans	4 full Redundant fans
	Insight Control	HP Insight Control Environment No Media single server license, including 1 year of 24x7 Technical Support and Updates
	Form Factor	Rack (5U)
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response

Pre-configured Models

HP ProLiant ML350 G6 X5650 2P 12GB-R P410i/1GB FBWC 750W RPS Tower Server 594874-001	Processor	(2) Intel® Xeon® X5650 (2.66GHz/6-core/12MB/95W, DDR3-1333, HT, Turbo 1/1/2/2/3/3) Processors
	Cache Memory	12MB (1 x 12MB) L3 cache
	Memory	12 GB (6 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
	Network Controller	Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
	Storage Controller	Embedded HP Smart Array P410i/1G FBWC Controller
	Hard Drive	None ship standard
	Internal Storage	(8) SFF SAS/SATA HDD Bays; upgradeable to (16)
	Optical Drive	SATA DVD ROM
	Power Supply	(2) 750 Watt Hot-Plug Redundant power supplies
	Fans	4 full Redundant fans
	Accessories	PS/2 Keyboard and Mouse ship standard
	Form Factor	Tower (5U)
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response

Smart Buys

The ProLiant Smart Buy program offers a collection of promotional server and option products that are configured with SMB in mind, offered at discounted prices, and positioned for quick delivery. Smart Buy server offers are available for a limited time only.

S-Buy ML350TG6 E5506 2GB LFF 516283-005	**Processor(s)**	(1) Intel® Xeon® Processor E5506 (2.13 GHz, 80 W, DDR3-800)
	Cache Memory	4MB Level 3 cache
	Memory	2 GB (2Rx8 PC3-10600R-9)
	Network Controller	Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
	Storage Controller	Smart Array P410i/ZM Controller (RAID 0/1/1+0)
	Hard Drive	None Ship Standard
	Internal Storage	Up to 6 LFF standard, up to 8 LFF with additional drive cage
	Optical Drive	Half-Height SATA DVD-ROM Drive
	PCI-Express Slots	Six expansion slots (six PCI-Express Gen2)
	Power Supply	(1) HP 750W CS HE Power Supply Kit
	Fans	2 Standard, 4 total fans supported (1 included in additional processor kit and 1 optional HP ML350G6 Redundant Fan Kit)
	Form Factor	Tower (5U)

S-Buy ML350TG6 E5520 4GB LFF 517429-005	**Processor(s)**	(1) Intel® Xeon® Processor E5520 (2.26 GHz, 80 W, DDR3-1066)
	Cache Memory	8MB Level 3 cache
	Memory	4 GB (2x2GB 2Rx8 PC3-10600R-9 Kit)
	Network Controller	Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
	Storage Controller	Smart Array P410i Controller with HP 256MB P-series cache module upgrade
	Hard Drive	None Ship Standard
	Internal Storage	Up to 6 LFF standard, up to 8 LFF with additional drive cage
	Optical Drive	Half-Height SATA DVD-ROM Drive
	PCI-Express Slots	Six expansion slots (six PCI-Express Gen2)
	Power Supply	(1) HP 750W CS HE Power Supply Kit
	Fans	2 Standard, 4 total fans supported (1 included in additional processor kit and 1 optional HP ML350G6 Redundant Fan Kit)
	Form Factor	Tower (5U)

Smart Buys

S-Buy ML350TG6 E5520 4GB SFF 517430-005	Processor(s)	(1) Intel® Xeon® Processor E5520 (2.26 GHz, 80 W, DDR3-1066)
	Cache Memory	8MB Level 3 cache
	Memory	4 GB (2x2GB 2Rx8 PC3-10600R-9 Kit)
	Network Controller	Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
	Storage Controller	Smart Array P410i Controller with HP 256MB P-series cache module upgrade
	Hard Drive	None Ship Standard
	Internal Storage	Up to 8 SFF standard, up to 16 SFF with additional drive cage
	Optical Drive	Half-Height SATA DVD-ROM Drive
	PCI-Express Slots	Six expansion slots (six PCI-Express Gen2)
	Power Supply	(1) HP 750W CS HE Power Supply Kit
	Fans	2 Standard, 4 total fans supported (1 included in additional processor kit and 1 optional HP ML350G6 Redundant Fan Kit)
	Form Factor	Tower (5U)

S-Buy ML350TG6 E5530 6GB HP 3x146GB SFF SAS SBS 2008 517431-005	Processor(s)	(1) Intel® Xeon® Processor E5530 (2.40 GHz, 80 W, DDR3-1066)
	Cache Memory	8MB Level 3 cache
	Memory	6 GB (3x2GB 2Rx8 PC3-10600R-9 Kit)
	Network Controller	Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
	Storage Controller	Smart Array P410i Controller with HP 256MB P-series cache module upgrade
	Hard Drive	3x146GB 3G SAS 10K SFF DP ENT HDD included
	Internal Storage	Up to 8 SFF standard, up to 16 SFF with additional drive cage
	Optical Drive	Half-Height SATA DVD-ROM Drive
	PCI-Express Slots	Six expansion slots (six PCI-Express Gen2)
	Power Supply	(2) HP 750W CS HE Power Supply Kit
	Fans	3 included (2 standard + included Redundant Fan Kit), 4 total fans supported (1 included in additional processor kit)
	Form Factor	Tower (5U)
	Operating System	Windows Small Business Server (SBS) 2008

Smart Buys

S-Buy ML350TG6 E5506 2GB LFF 600424-005	Processor(s)	(1) Intel® Xeon® Processor E5506 (2.13 GHz, 80 W, DDR3-800)
	Cache Memory	4MB Level 3 cache
	Memory	2 GB (2Rx8 PC3-10600R-9)
	Network Controller	Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
	Storage Controller	Smart Array P410i/ZM Controller (RAID 0/1/1+0)
	Hard Drive	None Ship Standard
	Internal Storage	Up to 6 LFF standard
	Optical Drive	HP Half-Height SATA DVD-RW Drive
	PCI-Express Slots	Six expansion slots (six PCI-Express Gen2)
	Power Supply	(1) HP 460W CS HE Power Supply
	Fans	3 included standard, up to 4 total fans supported
	Form Factor	Tower (5U)

S-Buy ML350TG6 E5620 4GB LFF 600425-005	Processor(s)	(1) Intel® Xeon® Processor E5620 (2.40 GHz, 80W, DDR3-1066, HT, Turbo (1/1/2/2)
	Cache Memory	12MB Level 3 cache
	Memory	4 GB (2x2GB 2Rx8 PC3-10600R-9 Kit)
	Network Controller	Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
	Storage Controller	Smart Array P410i Controller with HP 256MB P-series cache module upgrade
	Hard Drive	None Ship Standard
	Internal Storage	Up to 6 LFF standard
	Optical Drive	Half-Height SATA DVD-ROM Drive
	PCI-Express Slots	Six expansion slots (six PCI-Express Gen2)
	Power Supply	(1) HP 460W CS HE Power Supply
	Fans	3 included standard, up to 4 total fans supported
	Form Factor	Tower (5U)

Smart Buys

S-Buy ML350TG6 E5620 4GB SFF 600426-005	Processor(s)	Intel® Xeon® Processor E5620 (2.40 GHz, 80W, DDR3-1066, HT, Turbo (1/1/2/2)
	Cache Memory	12MB Level 3 cache
	Memory	4 GB (2x2GB 2Rx8 PC3-10600R-9 Kit)
	Network Controller	Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
	Storage Controller	Smart Array P410i Controller with HP 256MB P-series cache module upgrade
	Hard Drive	None Ship Standard
	Internal Storage	Up to 8 SFF standard
	Optical Drive	Half-Height SATA DVD-ROM Drive
	PCI-Express Slots	Six expansion slots (six PCI-Express Gen2)
	Power Supply	(1) HP 460W CS HE Power Supply
	Fans	3 included standard, up to 4 total fans supported
	Form Factor	Tower (5U)

S-Buy ML350TG6 E5630 6GB HP 2x146GB SFF SAS SBS 2008 600427-005	Processor(s)	(1) Intel® Xeon® Processor E5630 (2.53 GHz, 80W, DDR3-1066, HT, Turbo (1/1/2/2)
	Cache Memory	12MB Level 3 cache
	Memory	6 GB (3x2GB 2Rx8 PC3-10600R-9 Kit)
	Network Controller	Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
	Storage Controller	Smart Array P410i Controller with HP 256MB P-series cache module upgrade
	Hard Drive	2x146GB 3G SAS 15K rpm SFF (2.5-inch) DP ENT HDD included
	Internal Storage	Up to 8 SFF standard
	Optical Drive	Half-Height SATA DVD-ROM Drive
	PCI-Express Slots	Six expansion slots (six PCI-Express Gen2)
	Power Supply	(1) HP 750W CS HE Power Supply
	Fans	3 included standard, up to 4 total fans supported
	Form Factor	Tower (5U)
	Operating System	Windows Small Business Server (SBS) 2008

Smart Buys

S-Buy ML350TG6 E5606 4GB SFF 654078-S01	Processor(s)	(1) Intel® Xeon® E5606 (2.13GHz/4-core/4MB/80W)
	Cache Memory	4MB Level 3 cache
	Memory	4GB (1x4GB 1Rx4 PC3-10600R-9)
	Network Controller	Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
	Storage Controller	Smart Array P410i/ZM Controller (RAID 0/1/1+0)
	Hard Drive	None Ship Standard
	Internal Storage	Up to 8 SFF standard
	Optical Drive	HP Half-Height SATA DVD-RW Drive
	PCI-Express Slots	Six expansion slots (six PCI-Express Gen2)
	Power Supply	(1) HP 460W CS HE Power Supply
	Fans	3 included standard, up to 4 total fans supported
	Form Factor	Tower (5U)
ML350TG6 E5645 16GB SFF Server 656764-S01	Processor(s)	(2) Intel® Xeon® E5645 (2.40GHz/6-core/12MB/80W)
	Cache Memory	12MB Level 3 cache
	Memory	16GB (4x4GB 1Rx4 PC3-10600R-9)
	Network Controller	Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
	Storage Controller	Smart Array P410i/512MB FBWC Controller
	Hard Drive	None Ship Standard
	Internal Storage	Up to 8 SFF standard
	Optical Drive	HP Half-Height SATA DVD-RW Drive
	PCI-Express Slots	Six expansion slots (six PCI-Express Gen2)
	Power Supply	(2) HP 750W Common Slot High Efficiency Power Supply
	Fans	3 included standard, up to 4 total fans supported
	Form Factor	Tower (5U)
ML350TG6 E5645 4GB SFF Server 661326-S01	Processor(s)	(1) Intel® Xeon® E5645 (2.40GHz/6-core/12MB/80W)
	Cache Memory	12MB Level 3 cache
	Memory	4GB (1x4GB 1Rx4 PC3-10600R-9)
	Network Controller	Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
	Storage Controller	Smart Array P410i/256MB Controller
	Hard Drive	None Ship Standard
	Internal Storage	Up to 8 SFF standard
	Optical Drive	HP Half-Height SATA DVD-RW Drive
	PCI-Express Slots	Six expansion slots (six PCI-Express Gen2)
	Power Supply	(1 HP 460W Common Slot High Efficiency Power Supply
	Fans	3 included standard, up to 4 total fans supported
	Form Factor	Tower (5U)

NOTE: This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for information on configurable product offerings and requirements.
NOTE: Configure-to-order (CTO) servers must start with a CTO Chassis.
NOTE: FIO indicates that this option is only available as a factory installable option.

Step 1: Base Configuration (choose one of the following configurable models)

HP Models

ML350G6 Tower Models

HP ProLiant ML350 G6 Small Form Factor (SFF) Configure-to-order Tower Chassis 483447-B21

Includes:

Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
Embedded Smart Array P410i Controller
Eight (8) Hot-Plug (SFF) SAS/SATA Drive Bays
Seven (7) HDD blanks
Six (6) Expansion slots: One Express x16 Gen2 (x8 speed); One PCI-Express x8 Gen2 (x8 speed); Four PCI-Express x8 Gen2 (x4 speed)
Six (6) USB ports
PS/2 Keyboard & Mouse (selection required)
Tower Form Factor

HP ProLiant ML350 G6 Large Form Factor (LFF) Configure-to-order Tower Chassis 483448-B21

Includes:

Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
Embedded Smart Array P410i Controller
Six (6) Hot-Plug (LFF) SAS/SATA Drive Bays
Five (5) HDD blanks
Six (6) Expansion slots: One Express x16 Gen2 (x8 speed); One PCI-Express x8 Gen2(x8 speed); Four PCI-Express x8 Gen2 (x4 speed)
Six (6) USB ports
P/S 2 Keyboard & Mouse (selection required)
Tower Form Factor

ML350G6 Rack Models

HP ProLiant ML350 G6 Small Form Factor (SFF) Configure-to-order Rack Server 483443-B21

Includes:

Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
Embedded Smart Array P410i Controller
Eight (8) Hot-Plug (SFF) SAS/SATA Drive Bays
Seven (7) HDD blanks
Six (6) Expansion slots: One Express x16 Gen2 (x8 speed); One PCI-Express x8 Gen2 (x8 speed); Four PCI-Express x8 Gen2 (x4 speed)
Six (6) USB ports
Rack (5U) Form Factor

HP ProLiant ML350 G6 Large Form Factor (LFF) Configure-to-order Rack Server 483444-B21

Includes:

Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
Embedded Smart Array P410i Controller
Six (6) Hot-Plug (LFF) SAS/SATA Drive Bays
Five (5) HDD blanks

Six (6) Expansion slots: One Express x16 Gen2 (x8 speed); One PCI-Express x8 Gen2 (x8 speed); Four PCI-Express x8 Gen2 (x4 speed)
Six (6) USB ports
Rack (5U) Form Factor

Step 2: Choose Required Options (only one of the following from each list unless otherwise noted)

HP Processors	Six-Core Processors	
	HP ML350 G6 Intel® Xeon® X5675 (3.06GHz/6-core/12MB/95W) FIO Processor Kit	638315-L21
	HP ML350 G6 Intel® Xeon® X5670 (2.93GHz/6-core/12MB/95W) FIO Processor Kit	601236-L21
	HP ML350 G6 Intel® Xeon® X5660 (2.80GHz/6-core/12MB/95W) FIO Processor Kit	601238-L21
	HP ML350 G6 Intel® Xeon® X5650 (2.66GHz/6-core/12MB/95W) FIO Processor Kit	601240-L21
	HP ML350 G6 Intel® Xeon® E5649 (2.53GHz/6-core/12MB/80W) FIO Processor Kit	638316-L21
	HP ML350 G6 Intel® Xeon® E5645 (2.40GHz/6-core/12MB/80W) FIO Processor Kit	638317-L21
	Quad-Core Processors	
	HP ML350 G6 Intel® Xeon® X5672 (3.20GHz/4-core/12MB/95W) FIO Processor Kit	638314-L21
	HP ML350 G6 Intel® Xeon® E5640 (2.66GHz/4-core/12MB/80W) FIO Processor Kit	601242-L21
	HP ML350 G6 Intel® Xeon® E5630 (2.53GHz/4-core/12MB/80W) FIO Processor Kit	601244-L21
	HP ML350 G6 Intel® Xeon® E5620 (2.40GHz/4-core/12MB/80W) FIO Processor Kit	601246-L21
	HP ML350 G6 Intel® Xeon® E5607 (2.26GHz/4-core/8MB/80W) FIO Processor Kit	638318-L21
	HP ML350 G6 Intel® Xeon® E5606 (2.13GHz/4-core/8MB/80W) FIO Processor Kit	638319-L21
	HP ML350 G6 Intel® Xeon® E5603 (1.60GHz/4-core/4MB/80W) FIO Processor Kit	638320-L21
	HP ML350 G6 Intel® Xeon® E5530 (2.40GHz/4-core/8MB/80W) FIO Processor Kit	495912-L21
	HP ML350 G6 Intel® Xeon® E5520 (2.26GHz/4-core/8MB/80W) FIO Processor Kit	495914-L21
	HP ML350 G6 Intel® Xeon® E5506 (2.13GHz/4-core/4MB/80W) FIO Processor Kit	495916-L21
	HP ML350 G6 Intel® Xeon® E5504 (2.00GHz/4-core/4MB/80W) FIO Processor Kit	495918-L21
	HP ML350 G6 Intel® Xeon® L5630 (2.13GHz/4-core/12MB/40W) FIO Processor Kit	601252-L21
	Dual-Core Processors	
	HP ML350 G6 Intel® Xeon® E5503 (2.0GHz/2-core/4MB/80W) FIO Processor Kit	601250-L21
HP Memory	Registered DIMMs (RDIMMs)	
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500656-B21

	HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593339-B21
	HP 4GB (1x4GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500658-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500662-B21
	HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	500666-B21
	HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604504-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604506-B21
	HP 16GB (1x16GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 LP Memory Kit	627812-B21
	NOTE: Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors	
	Unbuffered with ECC DIMMs (UDIMMs)	
	HP 1GB (1x1GB) Single Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500668-B21
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500670-B21
	HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500672-B21
	HP 4GB (1x4GB) Dual Rank x8 PC3L-10600 (DDR3-1333) Unbuffered CAS-9 Low Power Memory Kit	619488-B21
	NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator. NOTE: Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: http://h18004.www1.hp.com/products/servers/platforms/energyefficient/	
HP Power Supplies	NOTE: Prior to making a power supply selection it is highly recommended that the HP Power Advisor is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at: www.hp.com/go/hppoweradvisor	
	HP 460W Common Slot Gold Hot Plug Power Supply Kit	503296-B21
	HP 750W Common Slot Gold Hot Plug Power Supply Kit	512327-B21
	HP 1200W Common Slot Silver Hot Plug Power Supply Kit	500172-B21
	NOTE: Option Kits contain optional power supply, an IEC power cable and PDU IEC cables.	

Step 3: Choose Additional Factory Integratable Options

HP Storage Controllers	HP Smart Array P212/256 BBWC 1-ports Int/1-ports Ext PCIe x8 FIO SAS Controller NOTE: SAS Controller supporting RAID 0/1/1+0/5.	491191-B21
	HP Smart Array P411/256 BBWC 2-ports Ext PCIe x8 FIO SAS Controller NOTE: SAS Controller supporting RAID 0/1/1+0/5.	491193-B21
	Upgrade Options	
	HP 256MB Factory Integrated P-Series Cache Module NOTE: Available for P410i only.	534108-B21
HP Performance Packs	Performance Packs are necessary to configure a HP ProLiant ML350 G6 to a High Performance Model which includes the latest performance technologies and enterprise class availability features pre-installed for convenience and value. The Performance Pack includes a 2nd processor, 512MB cache with BBWC for P410i (650 mAh P-Series Battery), redundant fan, and (1) 750W CS HE Power supply kit. NOTE: Must also select 447326-B21 (SATA DVD ROM) to achieve parity to ML350 G6 High Performance Models.	
	HP ML350G6 E5530 HPM FIO Kit	530547-B21
HP Insight Software	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License	582765-B21
	HP Insight Control for Linux including 1yr 24x7 Support ML/DL Bundle 1 Server FIO License	TC203A

Step 4: Choose Additional Options for Factory Integration

NOTE: For additional options, please refer to the "Core Options" and "Additional Options" section below.

NOTE: Some options may not be integrated at the factory. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for additional information.

HP Unique Options	HP ML350 G6 Redundant Fan/Baffle Kit	515081-B21
	HP ML350 G6 2 Slot PCI-X Riser Kit NOTE: The HP PCI-X Expander kit converts a single PCI Express slot (Slot 1) into two full height, full length 64-bit 100MHz PCI-X slots. The PCI-X Expander Kit can only be plug in Slot 1.	488413-B21
	HP ML350G6 Tower to Rack Conversion Kit NOTE: See "Redundant Options" section below for Hot Plug Redundant Power supplies.	534534-B21
	HP 2.5 Hard Disk Drive Blank Kit	503771-B21
HP Processors	Six-Core Processors	
	HP ML350 G6 Intel® Xeon® X5675 (3.06GHz/6-core/12MB/95W) Processor Kit	638315-B21
	HP ML350 G6 Intel® Xeon® X5670 (2.93GHz/6-core/12MB/95W) Processor Kit	601236-B21
	HP ML350 G6 Intel® Xeon® X5660 (2.80GHz/6-core/12MB/95W) Processor Kit	601238-B21
	HP ML350 G6 Intel® Xeon® X5650 (2.66GHz/6-core/12MB/95W) Processor Kit	601240-B21
	HP ML350 G6 Intel® Xeon® E5649 (2.53GHz/6-core/12MB/80W) Processor Kit	638316-B21
	HP ML350 G6 Intel® Xeon® E5645 (2.40GHz/6-core/12MB/80W) Processor Kit	638317-B21
	Quad-Core Processors	
	HP ML350 G6 Intel® Xeon® X5672 (3.20GHz/4-core/12MB/95W) Processor Kit	638314-B21
	HP ML350 G6 Intel® Xeon® E5640 (2.66GHz/4-core/12MB/80W) Processor Kit	601242-B21
	HP ML350 G6 Intel® Xeon® E5630 (2.53GHz/4-core/12MB/80W) Processor Kit	601244-B21
	HP ML350 G6 Intel® Xeon® E5620 (2.40GHz/4-core/12MB/80W) Processor Kit	601246-B21
	HP ML350 G6 Intel® Xeon® E5607 (2.26GHz/4-core/4MB/80W) Processor Kit	638318-B21
	HP ML350 G6 Intel® Xeon® E5606 (2.13GHz/4-core/4MB/80W) Processor Kit	638319-B21
	HP ML350 G6 Intel® Xeon® E5603 (2.00GHz/2-core/4MB/80W) Processor Kit	638320-B21
	HP ML350 G6 Intel® Xeon® X5570 (2.93GHz/4-core/8MB/95W) Processor Kit	495904-B21
	HP ML350 G6 Intel® Xeon® X5560 (2.80GHz/4-core/8MB/95W) Processor Kit	495906-B21
	HP ML350 G6 Intel® Xeon® X5550 (2.66GHz/4-core/8MB/95W) Processor Kit	495908-B21
	HP ML350 G6 Intel® Xeon® E5540 (2.53GHz/4-core/8MB/80W) Processor Kit	495910-B21
	HP ML350 G6 Intel® Xeon® E5530 (2.40GHz/4-core/8MB/80W) Processor Kit	495912-B21
	HP ML350 G6 Intel® Xeon® E5520 (2.26GHz/4-core/8MB/80W) Processor Kit	495914-B21
	HP ML350 G6 Intel® Xeon® E5507 (2.26 GHz/4-core/4MB/80W) Processor Kit	601248-B21
	HP ML350 G6 Intel® Xeon® E5506 (2.13GHz/4-core/4MB/80W) Processor Kit	495916-B21
	HP ML350 G6 Intel® Xeon® E5504 (2.00GHz/4-core/4MB/80W) Processor Kit	495918-B21
	HP ML350 G6 Intel® Xeon® L5630 (2.13GHz/4-core/12MB/40W) Processor Kit	601252-B21
	HP ML350 G6 Intel® Xeon® L5520 (2.26GHz/4-core/8MB/60W) Processor Kit	505513-B21
	HP ML350 G6 Intel® Xeon® L5506 (2.13GHz/4-core/4MB/60W) Processor Kit	495902-B21
	Dual-Core Processors	
	HP ML350 G6 Intel® Xeon® E5503 (2.0GHz/2-core/4MB/80W) Processor Kit	601250-B21

	HP ML350 G6 Intel® Xeon® E5502 (1.86GHz/2-core/4MB/80W) Processor Kit	495920-B21
HP Memory	Registered RDIMMs	
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500656-B21
	HP S-Buy 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500656-S21
	HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593339-B21
	HP S-Buy 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593339-S21
	HP 4GB (1x4GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500658-B21
	HP S-Buy 4GB (1x4GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500658-S21
	HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500662-B21
	HP S-Buy 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500662-S21
	HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	500666-B21
	HP S-Buy 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	500666-S21
	HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604504-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604506-B21
	NOTE: Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors	
	HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	627812-B21
	Unregistered with ECC UDIMMs	
	HP 1GB (1x1GB) Single Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500668-B21
	HP S-Buy 1GB (1x1GB) Single Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500668-S21
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500670-B21
	HP S-Buy 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500670-S21
	HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500672-B21
	HP S-Buy 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500672-S21

	HP 4GB (1x4GB) Dual Rank x8 PC3L-10600 (DDR3-1333) Unbuffered CAS-9 Low Power Memory Kit NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator. NOTE: Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: www.hp.com/go/proliant-energy-efficient.	619488-B21
HP Drive Cage Options	HP ML350/370 G6 8 Small Form Factor (SFF) 2nd Drive Cage Kit NOTE: The Second drive cage installation replaces 2 internal optical bays. It is required to purchase a SAS RAID controller or SAS Expander Card to support over 8 HDD NOTE: To cover an empty SFF HDD slot, please order the following SFF hard drive blank spare kit: 392613-001	507803-B21
	HP ML350/ML/DL370G6 2 Large Form Factor Drive Kit NOTE: The Second drive cage installation replaces 2 internal optical bays. NOTE: To cover an empty LFF HDD slot, please order the following LFF hard drive blank spare kit: 389015-001	487936-B21
HP Optical Drives	HP Half-Height SATA DVD-ROM Optical Drive	447326-B21
	HP Half-Height SATA DVD-RW Optical Drive NOTE: Please note that some of the earlier BTO models may not support adding SATA Optical Drives. To ensure compatibility of the SATA Optical Drives, please add additional optical drives only on models with Quad-Core 5400 Series.	447328-B21
HP Hard Drives	SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives	
	HP 900GB 6G SAS 10K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive	619291-B21
	HP 600GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	581286-B21
	HP 600GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive S-Buy	581286-S21
	HP 450GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	581284-B21
	HP 300GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	507127-B21
	HP 300GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive S-Buy	507127-S21
	HP 146GB 6G SAS 15K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	512547-B21
	HP 146GB 6G SAS 15K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive S-Buy	512547-S21
	HP 146GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	507125-B21

HP 146GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive S-Buy	507125-S21
HP 72GB 6G SAS 15K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	512545-B21
SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives	
HP 600GB 6G SAS 15K rpm LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	516828-B21
HP 450GB 6G SAS 15K rpm LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	516816-B21
HP 300GB 6G SAS 15K rpm LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	516814-B21
SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives	
HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Warranty Hard Drive	507614-B21
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12244_na/12244_na.html	
SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives	
HP 1TB 6G SAS 7.2K rpm SFF (2.5-inch) Hot Plug Midline 1yr Warranty Hard Drive	605835-B21
HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) Dual Port Midline 1yr Warranty Hard Drive	507610-B21
SATA Hot Plug SFF (2.5-inch) Midline (MDL) Drives	
HP 1TB 3G SATA 7.2K rpm SFF (2.5-inch) Hot Plug Midline 1yr Warranty Hard Drive	625609-B21
HP 500GB 3G SATA 7.2K rpm SFF (2.5-inch) Midline 1yr Warranty Hard Drive	507750-B21
HP 500GB 3G SATA 7.2K rpm SFF (2.5-inch) Midline 1yr Warranty Hard Drive S-Buy	507750-S21
HP 160GB 3G SATA 7.2K rpm SFF (2.5-inch) Midline 1yr Warranty Hard Drive	530888-B21
SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives	
HP 2TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	507632-B21
HP 1TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	454146-B21
HP 500GB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	458928-B21
SATA Hot Plug LFF (3.5-inch) Entry (ETY) Drives	
HP 250GB 3G SATA 7.2K rpm LFF (3.5-inch) Entry 1yr Warranty Hard Drive	571230-B21
HP 160GB 3G SATA 7.2K rpm LFF (3.5-inch) Entry 1yr Warranty Hard Drive	458945-B21
NOTE: SATA hard drives have a 1-year warranty. Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13021_na/13021_na.html	
SATA Hot Plug 3.5" Midline (MDL) Solid State Drives	
HP 120GB 3G SATA LFF (3.5-inch) Midline 1yr Warranty Solid State Drive	570763-B21
HP 60GB 3G SATA LFF (3.5-inch) Midline 1yr Warranty Solid State Drive	570761-B21
SATA Hot Plug Midline (MDL) Solid State Drives	
HP 120GB 3G SATA SFF (2.5-inch) Midline 1yr Warranty Solid State Drive	572073-B21
HP 60GB 3G SATA SFF (2.5-inch) Midline 1yr Warranty Solid State Drive	572071-B21
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13415_na/13415_na.html	

NOTE: The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.
NOTE: Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

HP Networking	Gigabit Ethernet adapters	
	HP NC112T PCI Express Gigabit Server Adapter	503746-B21
	HP NC360T PCI-E Dual Port Gigabit Server Adapter	412648-B21
	HP NC364T PCI-E Quad Port Gigabit Server Adapter	435508-B21
	NOTE: Does not support Windows 2000. NOTE: There is a maximum of five NC364T PCI Express Quad Port Gigabit Server Adapter NICs allowed in this server.	
	HP NC365T 4-port Ethernet Server Adapter	593722-B21
	HP NC373F PCI-E Multifunction 1000SX Gigabit Svr Adapter	394793-B21
	HP NC373T PCI-E Multifunction Gigabit Server Adapter	394791-B21
	HP NC375T PCI Express Quad Port Gigabit Server Adapter	538696-B21
	HP NC382T PCI Express Dual Port Multifunction Gigabit Server Adapter	458492-B21
	10 Gigabit Ethernet adapters	
	HP NC522SFP Dual Port 10GbE Server Adapter	468332-B21
	HP NC523SFP 10Gb 2-port Server Adapter	593717-B21
	HP NC550SFP Dual Port 10GbE Server Adapter	581201-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs	
HP Power Supplies	NOTE: Prior to making a power supply selection it is highly recommended that the HP Power Advisor is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at: www.hp.com/go/hppoweradvisor.	
	Power Supplies	
	HP 460W Common Slot Gold Hot Plug Power Supply Kit	503296-B21
	HP 750W Common Slot Gold Hot Plug Power Supply Kit	512327-B21
	HP 1200W Common Slot Silver Hot Plug Power Supply Kit	500172-B21
	NOTE: Option Kits contain optional power supply, an IEC power cable and PDU IEC cables.	
HP Cooling Options	HP ML350 G6 Redundant Fan/Baffle Kit	515081-B21

HP Insight Software	**HP Insight Control for Linux**	
	HP Insight Control for Linux including 1yr 24x7 Support Electronic License	TC213AAE
	HP Smart Buy Insight Control for Linux, 1-server license, including one year of 24x7 Technical Support and Updates, Electronic	TC213ASE
	HP Insight Control for Linux including 1yr 24x7 Support Single Server License	TC209A
	HP Insight Control for Linux Media Kit	TC208A
	NOTE: Media pack DVD contains the ISO image for HP Insight Control for Linux, HP Systems Insight Manager, HP Insight Control power management, HP Insight Control virtual machine management, and an integrated installer. Servers must be acquired separately. NOTE: Licenses ship without media. The Media Kit for Insight Control for Linux can be ordered separately, or can be downloaded at: http://www.hp.com/go/ic-linux (click on Download button). NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single set of activation keys. NOTE: For additional License Kits, including electronic licensing options, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/13019_na/13019_na.html	
	HP Insight Control	
	HP Insight Software Media Kit	436222-B21
	NOTE: Insight Software DVD media without licenses. Contains Insight Manager and Essentials software products and components licensed by Insight Control Environment suite. Uses an integrated installer to perform quick and accurate software installation and updates.	
	HP Insight Control including 1yr 24x7 Technical Support and Updates Single Server License	452148-B22
	HP Smart Buy Insight Control, No Media 1-Server License including 1 year of 24x7 Technical Support and Updates	452148-S22
	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Electronic License	TC278AAE
	NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key. NOTE: Customer will receive a license entitlement certificate. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service. NOTE: Licenses ship without media. The HP Insight Control Media Kit can be ordered separately, or can be downloaded at: http://www.hp.com/go/insightupdates. NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12631_na/12631_na.html	
	HP Integrated Lights-Out (iLO) Advanced	
	HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License	512485-B21

NOTE: This license allows 1 server to be deployed and managed via HP iLO Advanced. Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service

NOTE: For additional license kits, including electronic delivery options, please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/12362_na/12362_na.html

HP I/O Accelerator Options	HP 160GB Single Level Cell PCIe ioDrive for ProLiant Servers NOTE: A low-profile PCI bracket is included for use in low-profile slots.	600278-B21
	HP 320GB Multi Level Cell PCIe ioDrive for ProLiant Servers NOTE: A low-profile PCI bracket is included for use in low-profile slots.	600279-B21
	HP 320GB Single Level Cell PCIe ioDrive Duo for ProLiant Servers	600281-B21
	HP 640GB Multi Level Cell PCIe ioDrive Duo for ProLiant Servers	600282-B21
	HP 1.28TB Multi Level Cell PCIe IO Accelerator NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13587_na/13587_na.html	641027-B21
HP Graphics Options	HP 350/370G6 Graphic Card Cable Kit	537721-B21
HP Security - TPM	HP Trusted Platform Module Option NOTE: The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys. Windows® BitLocker™ Drive Encryption (BitLocker) is a data protection feature available in Windows Server® 2008. BitLocker leverages the enhanced security capabilities of a Trusted Platform Module (TPM) version 1.2. The TPM works with BitLocker to help protect user data and to ensure that a server running Windows Server 2008 has not been tampered with while the system was offline. For more information about TPM, including a white paper, go to: www.hp.com/go/TPM. NOTE: ProLiant OS pre-installed units will come with the partition required for TPM deployment. NOTE: The TPM key is unique to every TPM deployed server and must be retained. Misplacing or loosing the key could result in data loss.	488069-B21
HP Storage Controllers	SAS Controllers	
	HP Smart Array P212 Controller	
	HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller	462828-B21
	HP Smart Array P212/256 1-ports Int/1-ports Ext PCIe x8 SAS Controller	462834-B21
	HP Smart Array P410 Controller	
	HP Smart Array P410/256 2-ports Int PCIe x8 SAS Controller	462862-B21
	HP Smart Array P410/512 BBWC 2-ports Int PCIe x8 SAS Controller	462864-B21

HP Smart Array P410/512 FBWC 2-ports Int PCIe x8 SAS Controller	578230-B21
HP Smart Array P410/1G FBWC 2-ports Int PCIe x8 SAS Controller	572532-B21
NOTE: HP NHP Internal SAS/SATA 4 Port Cable Kit (487734-B21) is required when adding Smart Array P410 Controller on Non-Hot Plug SATA/SAS server models.	
HP Smart Array P411 Controller	
HP Smart Array P411/256 2-ports Ext PCIe x8 SAS Controller	462830-B21
HP Smart Array P411/512 BBWC 2-ports Ext PCIe x8 SAS Controller	462832-B21
HP Smart Array P411/512 FBWC 2-ports Ext PCIe x8 SAS Controller	578229-B21
HP Smart Array P411/1G FBWC 2-ports Ext PCIe x8 SAS Controller	572531-B21
Smart Array P812 Controller	
HP Smart Array P812/1G FBWC 2-ports Int/4-ports Ext PCIe x8 SAS Controller	487204-B21
Optional Upgrades	
HP 256MB P-series Cache Upgrade	462968-B21
NOTE: Supported on HP Smart Array P212 & HP Smart Array P410/ZM Controller only.	
HP 512MB P-Series Battery Backed Write Cache Upgrade	462967-B21
NOTE: Supported on HP Smart Array P410 Controller, and HP Smart Array P411 Controller only.	
HP 650 mAh P-Series Battery	462969-B21
NOTE: Supported on HP Smart Array P212 Controller, HP Smart Array P410 Controller, and HP Smart Array P411 Controller only.	
HP 15 Position 24in SFP Battery Cable Assembly	496029-B21
NOTE: Supported on HP Smart Array P212 Controller, HP Smart Array P410 Controller, and HP Smart Array P411 Controller only.	
HP 512MB Flash Backed Write Cache	534916-B21
NOTE: Supported on the Smart Array P410i Controller only.	
HP 1GB Flash Backed Cache	534562-B21
NOTE: Supported on the Smart Array P410i Controller only.	
HP Smart Array Advanced Pack including 1yr 24x7 Technical Support and Updates Single Server License	516471-B21
NOTE: This part number can be used to purchase a single license or to order multiple licenses with a single activation key. Customers will receive a license entitlement certificate via e-mail. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Include one year of 24x7 HP Software Technical Support Services.	
HP 24 Bay 3Gb SAS Expander Card	468406-B21
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13203_na/13203_na.html (Smart Array P212 Controller) http://h18000.www1.hp.com/products/quickspecs/13201_na/13201_na.html (Smart Array P410 Controller) http://h18000.www1.hp.com/products/quickspecs/13202_na/13202_na.html (Smart Array P411 Controller) http://h18000.www1.hp.com/products/quickspecs/13558_na/13558_na.html	

	(Smart Array P812 Controller) http://h18000.www1.hp.com/products/quickspecs/13200_na/13200_na.html (Smart Array Advanced Pack)	
	SAS HBA	
	HP SC08Ge 2-ports Ext PCIe x8 SAS Host Bus Adapter	488765-B21
	HP Modular Smart Array SC08e 2-ports Ext PCIe x8 SAS Host Bus Adapter	614988-B21
	NOTE: Please see the QuickSpecs for additional information: http://h18004.www1.hp.com/products/quickspecs/13082_na/13082_na.html	
	SCSI HBA	
	HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter NOTE: Supports external drive attach.	412911-B21
	HP StorageWorks U320e SCSI Dual Channel Host Bus Adapter	AH627A
	NOTE: Please see the following QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/12566_na/12566_na.html	
HP Tape Backup	NOTE: For the complete range of StorageWorks tape drives, autoloaders, libraries and media see: http://www.hp.com/go/tape. For hardware and software compatibility of HP StorageWorks tape backup products see: http://www.hp.com/go/connect.	
	HP StorageWorks DAT 160 SAS Internal Tape Drive	Q1587A
	HP StorageWorks DAT 160 USB Internal Tape Drive	Q1580A
	HP StorageWorks DAT 320 USB Internal Tape Drive	AJ825A
	HP StorageWorks DAT 320 SAS Internal Tape Drive	AJ830A
	NOTE: Connection using HP SC44Ge SAS Host Bus Adapter (416096-B21) recommended.	
	HP StorageWorks Ultrium 448 SAS Internal Drive	DW085A
	HP StorageWorks LTO-4 Ultrium 1760 SAS Internal WW Tape Drive	EH919A
	NOTE: Connection using HP SC44Ge SAS Host Bus Adapter (416096-B21) recommended.	
	HP StorageWorks LTO-4 Ultrium 1840 SAS External WW Drive	EH861A
	NOTE: Connection using HP SC44Ge SAS Host Bus Adapter (416096-B21) recommended.	
	HP StorageWorks LTO-5 Ultrium 3000 SAS Internal Tape Drive	EH957A
	HP StorageWorks LTO-5 Ultrium 3000 SAS External Tape Drive	EH958A
	NOTE: Connection using HP SC44Ge SAS Host Bus Adapter (416096-B21) recommended.	
	HP StorageWorks 1/8 G2 LTO-4 Ultrium 1760 SAS Tape Autoloader	AK377A
	NOTE: Requires HP 1U Tape Autoloader Rack Kit (AH166A) for rack installation. Connection using HP SC44Ge SAS Host Bus Adapter (416096-B21) recommended.	
	HP StorageWorks MSL2024 1 LTO-5 Ultrium 3000 SAS Tape Library	BL537A
	HP StorageWorks MSL4048 2 LTO-4 Ultrium 1760 SAS Tape Library	AK380A
	HP StorageWorks MSL2024 1 LTO-4 Ultrium 1760 SAS Tape Library	AK378A

Additional Options

HP Disk Backup	NOTE: For the complete range of StorageWorks D2D Backup Systems see: http://www.hp.com/go/d2d. For the complete range of StorageWorks RDX drives and media see: http://www.hp.com/go/rdx. For hardware and software compatibility of HP StorageWorks disk backup products see: http://www.hp.com/go/connect.	
	HP StorageWorks RDX Removable Disk Backup Systems USB	
	HP StorageWorks RDX320 Internal Removable Disk Backup System	AJ767A
	NOTE: For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 320GB of disk capacity per data cartridge.	
	HP StorageWorks RDX500 Internal Removable Disk Backup System	AJ934A
	NOTE: For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 500GB of disk capacity per data cartridge.	
	HP StorageWorks RDX160 Internal Removable Disk Backup System	AJ765A
	HP StorageWorks RDX1000 Internal Removable Disk Backup System	BV847A
HP Storage Options	NOTE: The following is a list of all Fibre Channel Host Bus Adapters for Windows and Linux. For detailed compatibility information please see: http://h18006.www1.hp.com/storage/saninfrastructure/hba.html	
	Storage Fibre Channel HBA	
	Brocade Fibre Channel HBAs	
	HP Storage 81B PCIe 8Gb Fibre Channel Single Port Host Bus Adapter	AP769A
	HP Storage 82B PCIe 8Gb Fibre Channel Dual Port Host Bus Adapter	AP770A
	HP Storage 41B PCIe 4Gb Fibre Channel Single Port Host Bus Adapter	AP767A
	HP Storage 42B PCIe 4Gb Fibre Channel Dual Port Host Bus Adapter	AP768A
	Emulex Fibre Channel HBAs	
	HP Storage 81E 8Gb Single Port PCI-e Fibre Channel Host Bus Adapter	AJ762A
	HP Storage 82E 8Gb Dual Port PCI-e Fibre Channel Host Bus Adapter	AJ763A
	HP Storage FC2142SR 4Gb PCIe Host Bus Adapter	A8002A
	HP Storage FC2242SR 4Gb PCIe DC Host Bus Adapter	A8003A
	QLogic Fibre Channel HBAs	
	HP Storage 81Q PCI-e Fibre Channel Host Bus Adapter	AK344A
	HP Storage 82Q 8Gb Dual Port PCI-e Fibre Channel Host Bus Adapter	AJ764A
	HP Storage FC1142SR 4Gb PCIe Host Bus Adapter	AE311A
	HP Storage FC1242SR 4Gb PCIe DC Host Bus Adapter	AE312A
	Storage Converged Network Adapter	
	HP Storage CN1000E Dual Port Converged Network Adapter	AW520A
	HP Storage CN1000Q Dual Port Converged Network Adapter	BS668A

Additional Options

HP Disk Storage Systems	MSA SAN Storage Arrays	
	HP Storage MSA60 Array	418408-B21
	NOTE: Please see the QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: http://h18000.www1.hp.com/products/quickspecs/12627_na/12627_na.html	
	HP Storage MSA70 Array	418800-B21
	NOTE: Please see the QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: http://h18000.www1.hp.com/products/quickspecs/12652_na/12652_na.html	
	Disk Enclosures	
	HP Storage D2600 Disk Enclosure	AJ940A
	HP Storage D2700 Disk Enclosure	AJ941A
	NOTE: Please see the QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/13404_na/13404_na.html	
HP Uninterruptible Power Systems	HP Tower UPS	
	HP T1500 G3 UPS Models	
	HP T1500 G3 1400VA Tower Uninterruptible Power System	AF450A
	HP T1500 G3 1400VA Tower Uninterruptible Power System S-Buy	AF450S
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/13160_na/13160_na.html	
	HP T1000 G3 UPS Models	
	HP T1000 G3 1000VA Tower Uninterruptible Power System	AF448A
	HP Rack-mountable UPS	
	HP R1500 G2 UPS	
	HP R1500 G2 1440VA Low Voltage 1U Rackmount Uninterruptible Power System	AF419A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/12507_na/12507_na.html	
	HP R/T3000 Uninterruptible Power System (UPS)	
	HP R/T3000 2880VA Low Voltage 2U Rackmount Uninterruptible Power System	AF452A
	HP R/T3000 2880VA Low Voltage 2U Rackmount Uninterruptible Power System S-Buy	AF452S
	HP R/T3000 3300VA High Voltage 2U Rackmount Uninterruptible Power System	AF453A
	HP R/T3000 3300VA High Voltage 2U Rackmount Uninterruptible Power System S-Buy	AF453S
	NOTE: For additional information on HP Uninterruptable Power Systems please go to: www.hp.com/servers/rackups. NOTE: Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: www.hp.com/products/powercords.	

Additional Options

HP Rack Series	Rack 10000 G2 series	
	HP 10642 G2 Pallet Universal Rack	AF001A
	HP 10642 G2 Shock Universal Rack	AF002A
	HP 10642 G2 1200mm deep Shock Rack	AF092A
	HP 10647 G2 1200mm deep Shock Rack	AF094A
HP Rack Options	Keyboards and Monitors	
	HP TFT7600 G2 KVM Console Rackmount Keyboard Monitor	AZ870A
	HP TFT7600 G2 KVM Console Rackmount Keyboard TAA Monitor	AZ885A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13731_na/13731_na.html	
	HP 1U Rackmount Keyboard with USB	AG072A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12465_na/12465_na.html	
	NOTE: For additional information regarding Rack Options, please see the following URL: http://www.hp.com/go/rackandpower.	
	HP Server Console Switches	
	HP Server Console 0x2x8 Port Analog Switch	AF616A
	HP Server Console 0x2x16 Port Analog Switch	AF617A
	Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/11834_na/11834_na.html	
	HP Server Console Switch G2 with Virtual Media & CAC	
	HP 0x2x16 KVM Server Console Switch G2 with Virtual Media CAC Software	AF618A
	HP 0x2x32 KVM Server Console Switch G2 with Virtual Media CAC Software	AF619A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13475_na/13475_na.html	
	HP IP Console Switch G2 with Virtual Media & CAC	
	HP 1x1Ex8 KVM IP Console Switch G2 with Virtual Media CAC Software	AF620A
	HP 2x1Ex16 KVM IP Console Switch G2 with Virtual Media CAC Software	AF621A
	HP 4x1Ex32 KVM IP Console Switch G2 with Virtual Media CAC Software	AF622A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13474_na/13474_na.html	
	Rack Kits	
	HP ML350G6 Tower to Rack Conversion Kit	534534-B21

Additional Options

HP USB and SD Options	HP 2GB USB Flash Media Drive Key Kit	608447-B21
	NOTE: HP qualified blank USB key for use with HP ProLiant servers that support the VMware virtualization environment and other HP value-add software like SmartStart. HP recommends this industry standard USB flash device for use with VMware ESXi. USB device must be installed in the internal slot of the ProLiant server for use with VMware ESXi. Refer to HP VMware Getting Started Guide for installation instructions.	
	HP 4GB Secure Digital High Capacity Flash Media Kit	580387-B21
	NOTE: Blank SD media device is supported for use with VMware and Citrix. SD media must be installed in the internal slot of the ProLiant server. Learn more at http://www.hp.com/go/proliantvirtualization.	
	HP USB 2-Button Optical Scroll Mouse	DC172B
	HP USB Standard Keyboard US	DT528A#ABA
HP Care Pack Services	Hardware Services On-site Service	
	HP 3 year 4 hour 13x5 ProLiant ML350 Hardware Support	U4512E
	HP 3 year 4 hour 24x7 ProLiant ML350 Hardware Support	U4513E
	HP 3 year 6 hour 24x7 Call to Repair ProLiant ML350 Hardware Support	U4514E
	Installation & Start-up Services	
	HP Install ProLiant ML350 Service	U4522E
	HP Startup ProLiant ML350 Service	U4523E
	Support Plus 24	
	HP 3 year Support Plus 24 Microsoft ProLiant ML350 Service	U4525E
	HP 3 year Support Plus 24 SuSE ProLiant ML350 Service	U6308E
Smart Buy Care Pack Services	S-Buy 4-Hour Onsite Response, 13-Hour x 5-Day Coverage, 3 years	UE901E
	S-Buy 4-Hour Onsite Response, 24-Hour x 7-Day Coverage, 3 years	UE902E
	S-Buy 6-Hour Call to Repair, 24-Hour x 7-Day Coverage, 3 years	UM361E
	NOTE: Smart Buy Care Packs can only be attached to Smart Buy SKUs	

NOTE: Memory configurations listed do not apply to "Factory Integrated Models".

DDR3 memory population guidelines

For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator

Some DIMM installation guidelines are summarized below:

- For servers with eighteen (18) memory slots:
  - There are three (3) channels per processor; six (6) channels per server
  - There are three (3) DIMM slots for each memory channel; eighteen (18) total slots
  - Memory channel 1 consists of the three (3) DIMMs that are closest to the processor
  - Memory channel 3 consists of the three (3) DIMMs that are furthest from the processor
- DIMM slots that are white should be populated first
- Do not mix Unbuffered memory (UDIMMs) with Registered memory (RDIMMs)
- Do not install DIMMs if the corresponding processor is not installed
- If only one processor is installed in a 2CPU system, only half of the DIMM slots are available
- To maximize performance, balance the total memory capacity between all installed processors
- It is not required, but it is recommended to load the channels similarly if possible
- If any Quad rank DIMMs are installed, all channels are limited to only 2 DIMMs per channel
- You can only install two quad-rank DIMMs per channel
- You can only install two UDIMMs per channel; if available, the third slot in the channel must remain empty
- Populate DIMMs from heaviest load (quad-rank) to lightest load (single-rank) within a channel
- Heaviest load (DIMM with most ranks) within a channel goes furthest from the chipset
- For memory mirroring mode, channel 3 must be unpopulated. Channels 1 and 2 are populated identically
- For lock-step mode, channel 3 must be unpopulated. DIMMs in channels 1 and 2 will be installed in pairs. The paired slots will be 1,4; 2,5; 3;6 on a 3DPC system or 1,4; 2,5; on a 2DPC system
- Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors
- If mixing DIMM voltage is a requirement, please note that the DIMMs will run at 1.5V since all 1.35V are capable of supporting 1.5V operations

DIMM slot/capacity/populated speed table											
DIMM Type ->	Registered DIMMS (RDIMMs)								Unbuffered with ECC DIMMs (UDIMMs)		
DIMM Rank ->	Single Rank (1R)	Dual Rank (2R)					Quad Rank (4R)		Single Rank (1R)	Dual Rank (2R)	
DIMM Capacity ->	4GB	2GB	4GB	8GB	8GB	16GB	4GB	16GB	1GB	2GB	4GB
DIMM Native Speed (MHz) ->	1333	1333	1333	1067	1333	1333	1067	1067	1333	1333	1333
Voltage	LV/Std	Std	Std	Std	LV/Std	LV/Std	Std	Std	Std	Std	Std
SLOTS THAT CAN BE POPULATED											
18 slot servers	18	18	18	18	18	18	12	12	12	12	12
MAXIMUM CAPACITY (GB)											

Memory

18 slot servers	72	36	72	144	144	288	48	192	12	24	48
POPULATED DIMM SPEED (MHz)											
1 DIMM Per Channel	1333	1333	1333	1067	1333	1333	1067	1067	1333	1333	1333
2 DIMM Per Channel	1333*	1333*	1333*	1067	1333*	1066/ 1333**	800	800	1333	1333	1333*
3 DIMM Per Channel	800	800	800	800	800	800***	n/a	n/a	n/a	n/a	n/a
* Supported with ROM update via ROM Based Setup Utility (RBSU). UDIMM support is only on 12-slot servers. ** 2DPC: LV runs at 1066, Std voltage runs at 1333 ** 3DPC: LV/Std voltage runs at 800											

NOTES:

- PC3-10600 DIMMs have a maximum speed of 1333MHz. PC3-8500 DIMMs have a maximum speed of 1066MHz
- Mixing DIMM speeds is allowed, but the system processor speed rules always override the DIMM capabilities
- If you do mix DIMM speeds, the memory bus will default to the minimum clock rate of all DIMMs in the system - even if the slower DIMM is on the other processor
- If you install 1x 1066MHz DIMM in channel 1 and 1x 1333MHz DIMM in channel 2, the maximum speed will be 1066MHz If you install 1x 1066MHz DIMM in channel 1 and 5x 1333MHz DIMMs with 1 DIMM Per Channel (DPC) in each of the other channels, the maximum speed will be 1066MHz
- If you install 1x 1066MHz DIMM in channel 1 and 5x 1333MHz DIMMs with 1 DIMM Per Channel (DPC) in each of the other channels, you run at 1066MHz
- If you install 3DPC in one channel (if applicable) and 1DPC in all other channels, you run at 800MHz
- Maximum memory speed will also depend on the processor installed
- References to the above MHz speeds are for the various speeds of DDR3 DIMMs; 1333 refers to DDR3-1333, etc.

DIMM slot and configuration diagrams

Basic memory slot & population diagram

- Population order; start with "A" first, "B" second, "C" third, etc.

18 DIMM SLOTS (9 per CPU node)					
	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G	1	G	Chnl 1
	2	D	2	D	
	3	A	3	A	
Chnl 2	4	H	4	H	Chnl 2
	5	E	5	E	
	6	B	6	B	
Chnl 3	7	I	7	I	Chnl 3
	8	F	8	F	
	9	C	9	C	

Memory

Standard memory configuration (1 CPU model)

- 6GB, consisting of three (3) 2GB dual-rank PC3-10600 RDIMMs (Base Model)

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; empty	1	G; empty	Chnl 1
	2	D; empty	2	D; empty	
	3	A; 2GB RDIMM	3	A; empty	
Chnl 2	4	H; empty	4	H; empty	Chnl 2
	5	E; empty	5	E; empty	
	6	B; 2GB RDIMM	6	B; empty	
Chnl 3	7	I; empty	7	I; empty	Chnl 3
	8	F; empty	8	F; empty	
	9	C; 2GB RDIMM	9	C; empty	

Standard memory plus optional memory (1 CPU model)

- 54GB, consisting of three (3) 2GB RDIMMs plus six (6) 8GB RDIMMs (Base Model)
  - 3x 2GB dual-rank PC3-10600 RDIMMs
  - 6x 8GB dual-rank PC3-8500 RDIMMs

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; 8GB RDIMM	1	G; empty	Chnl 1
	2	D; 8GB RDIMM	2	D; empty	
	3	A; 2GB RDIMM	3	A; empty	
Chnl 2	4	H; 8GB RDIMM	4	H; empty	Chnl 2
	5	E; 8GB RDIMM	5	E; empty	
	6	B; 2GB RDIMM	6	B; empty	
Chnl 3	7	I; 8GB RDIMM	7	I; empty	Chnl 3
	8	F; 8GB RDIMM	8	F; empty	
	9	C; 2GB RDIMM	9	C; empty	

Standard memory replaced with optional memory (1 CPU model)
RDIMM maximum configuration (1 CPU model)

- 96GB, consisting of six (6) 16GB quad-rank PC3-8500 RDIMMs

Memory

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; empty	1	G; empty	Chnl 1
	2	D; 16GB RDIMM	2	D; empty	
	3	A; 16GB RDIMM	3	A; empty	
Chnl 2	4	H; empty	4	H; empty	Chnl 2
	5	E; 16GB RDIMM	5	E; empty	
	6	B; 16GB RDIMM	6	B; empty	
Chnl 3	7	I; empty	7	I; empty	Chnl 3
	8	F; 16GB RDIMM	8	F; empty	
	9	C; 16GB RDIMM	9	C; empty	

UDIMM maximum configuration (1 CPU model)

- 24GB, consisting of six (6) 4GB dual-rank PC3-10600 UDIMMs

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; empty	1	G; empty	Chnl 1
	2	D; 4GB UDIMM	2	D; empty	
	3	A; 4GB UDIMM	3	A; empty	
Chnl 2	4	H; empty	4	H; empty	Chnl 2
	5	E; 4GB UDIMM	5	E; empty	
	6	B; 4GB UDIMM	6	B; empty	
Chnl 3	7	I; empty	7	I; empty	Chnl 3
	8	F; 4GB UDIMM	8	F; empty	
	9	C; 4GB UDIMM	9	C; empty	

Standard memory replaced with optional memory (2 CPU model)
RDIMM maximum configuration (2 CPU model)

- 288GB, consisting of eighteen (18) 16GB dual-rank PC3L-10600 RDIMMs

Memory

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; empty	1	G; empty	Chnl 1
	2	D; 16GB RDIMM	2	D; 16GB RDIMM	
	3	A; 16GB RDIMM	3	A; 16GB RDIMM	
Chnl 2	4	H; empty	4	H; empty	Chnl 2
	5	E; 16GB RDIMM	5	E; 16GB RDIMM	
	6	B; 16GB RDIMM	6	B; 16GB RDIMM	
Chnl 3	7	I; empty	7	I; empty	Chnl 3
	8	F; 16GB RDIMM	8	F; 16GB RDIMM	
	9	C; 16GB RDIMM	9	C; 16GB RDIMM	

UDIMM maximum configuration (2 CPU model)

- 48GB, consisting of twelve (12) 4GB dual-rank PC3-10600 UDIMMs

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; empty	1	G; empty	Chnl 1
	2	D; 4GB UDIMM	2	D; 4GB UDIMM	
	3	A; 4GB UDIMM	3	A; 4GB UDIMM	
Chnl 2	4	H; empty	4	H; empty	Chnl 2
	5	E; 4GB UDIMM	5	E; 4GB UDIMM	
	6	B; 4GB UDIMM	6	B; 4GB UDIMM	
Chnl 3	7	I; empty	7	I; empty	Chnl 3
	8	F; 4GB UDIMM	8	F; 4GB UDIMM	
	9	C; 4GB UDIMM	9	C; 4GB UDIMM	

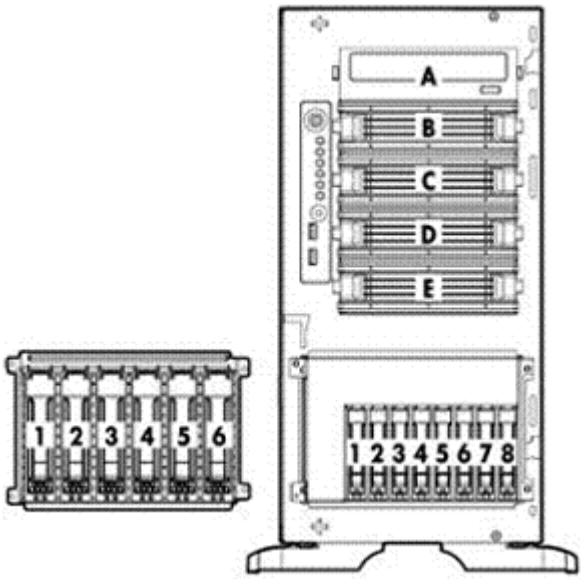
NOTE: Capacity references are rounded to the common Gigabyte values.

- 1GB = 1024MB
- 2GB = 2048MB
- 4GB = 4096MB
- 8GB = 8192MB
- 16GB = 16384MB

Memory

Following are memory options available from HP:

Memory	Registered DIMMs (RDIMMs)	
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500656-B21
	HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593339-B21
	HP 4GB (1x4GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500658-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500662-B21
	HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	500666-B21
	HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604504-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604506-B21
	NOTE: Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors	
	HP 16GB (1x16GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 LP Memory Kit	627812-B21
	Unbuffered with ECC DIMMs (UDIMMs)	
	HP 1GB (1x1GB) Single Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500668-B21
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500670-B21
	HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500672-B21
	HP 4GB (1x4GB) Dual Rank x8 PC3L-10600 (DDR3-1333) Unbuffered CAS-9 Low Power Memory Kit	619488-B21
	NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator. NOTE: Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: http://h18004.www1.hp.com/products/servers/platforms/energyefficient/	



1 - 6	6 x 3.5" (LFF) Hot-Plug SAS/SATA hard drive bays
Or	
1 - 8	8 x 2.5" (SFF) Hot-Plug SAS/SATA hard drive bays
B,C,D,E	Available half height media bays
A-E	Removable Optical Drive
D+E	8 x 2.5" (SFF) Hot-Plug SAS/SATA hard drive bays or 2 x 3.5" (LFF) Hot-Plug SAS/SATA hard drive bays

Drive Support

	Quantity Supported	Position Supported	Controller
Removable Media			
HP Half-Height SATA DVD-ROM Optical Drive	Up to 1	A-E	Integrated SATA Controller
HP Half-Height SATA DVD RW Optical Drive	Up to 1	A-E	Integrated SATA Controller

Hard Drives

NOTE: The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

NOTE: Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives

	Quantity Supported	Position Supported	Controller
900GB 6G SAS 10K DP 600GB 6G SAS 10K DP 450GB 6G SAS 10K DP 300GB 6G SAS 10K DP 146GB 6G SAS 15K DP 146GB 6G SAS 10K DP 72GB 6G SAS 15K DP	Up to 16 SFF	1-8 and D+E	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/512 MB FBWC Controller HP Smart Array P411/1G FBWC Controller HP Smart Array P812/1G Flash Backed Cache Controller

SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives

	Quantity Supported	Position Supported	Controller
600GB 6G SAS 15K DP 450GB 6G SAS 15K DP 300GB 6G SAS 15K DP	Up to 8 LFF	1-6 and D+E	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/512 MB FBWC Controller HP Smart Array P411/1G FBWC Controller HP Smart Array P812/1G Flash Backed Cache Controller

SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
2TB 6G SAS 2.7K DP 1TB 6G SAS 2.7K DP	Up to 6 LFF	1-6 and D+E	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/512 MB FBWC Controller HP Smart Array P411/1G FBWC Controller HP Smart Array P812/1G Flash Backed Cache Controller

SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
1TB 6G SAS 7.2K DP 500GB 6G SAS 7.2K DP	Up to 16 SFF	1-8 and D+E	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/512 MB FBWC Controller HP Smart Array P411/1G FBWC Controller HP Smart Array P812/1G Flash Backed Cache Controller

SATA Hot Plug SFF (2.5-inch) Midline (MDL) Drives

Storage

	Quantity Supported	Position Supported	Controller
500GB 3G SATA 7.2K 160GB 3G SATA 7.2K	Up to 16	1-8 and D+E	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/512 MB FBWC Controller HP Smart Array P411/1G FBWC Controller HP Smart Array P812/1G Flash Backed Cache Controller

	Quantity Supported	Position Supported	Controller
SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives			
2TB 3G SATA 7.2K 1TB 3G SATA 7.2K 500GB 3G SATA 7.2K	Up to 6 LFF	1-6 and D+E	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/512 MB FBWC Controller HP Smart Array P411/1G FBWC Controller HP Smart Array P812/1G Flash Backed Cache Controller

	Quantity Supported	Position Supported	Controller
SATA Hot Plug LFF (3.5-inch) Entry (ETY) Drives			
250GB 3G SATA 7.2K 160GB 3G SATA 7.2K	Up to 8	1-6 and D+E	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/512 MB FBWC Controller HP Smart Array P411/1G FBWC Controller HP Smart Array P812/1G Flash Backed Cache Controller

	Quantity Supported	Position Supported	Controller
SATA Hot Plug Midline (MDL) Solid State Drives			

Storage

120GB 3.0G SATA 60GB 3.0G SATA	Up to 16	1-8 and D+E	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/512 MB FBWC Controller HP Smart Array P411/1G FBWC Controller HP Smart Array P812/1G Flash Backed Cache Controller

SATA Hot Plug 3.5" Midline (MDL) Solid State Drives

	Quantity Supported	Position Supported	Controller
120GB 3.0G SATA 60GB 3.0G SATA	Up to 8	1-6 and D+E	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/512 MB FBWC Controller HP Smart Array P411/1G FBWC Controller HP Smart Array P812/1G Flash Backed Cache Controller

External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
60 Modular Smart Array	Up to 4	External	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller
	Up to 8	External	HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/512 MB FBWC Controller HP Smart Array P411/1G FBWC Controller HP Smart Array P812/1G Flash Backed Cache Controller HP Smart Array P800 Controller
70 Modular Smart Array	Up to 2	External	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller
	Up to 4	External	HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/512 MB FBWC Controller HP Smart Array P411/1G FBWC Controller HP Smart Array P812/1G Flash Backed Cache Controller HP Smart Array P800 Controller
HP 2000sa Modular Smart Array Controller	Up to 4	External	HP SC08Ge Host Bus Adapter

D2700 Disk Enclosure	Up to 2 Up to 4	External	HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/512 MB FBWC Controller HP Smart Array P411/1G FBWC Controller HP Smart Array P812/1G Flash Backed Cache Controller

Tape and Disk-Based Backup

NOTE: For the complete range of StorageWorks tape drives, autoloaders, libraries and media, including the internal fitting models, see: http://www.hp.com/go/tape. For the complete range of StorageWorks D2D Backup Systems see: http://www.hp.com/go/d2d. For the complete range of StorageWorks RDX drives and media see: http://www.hp.com/go/rdx. For hardware and software compatibility of HP StorageWorks disk and tape backup products see: http://www.hp.com/go/connect.

	Position Supported	Controller	Controller/HBA Option Kit Part Number
HP StorageWorks SCSI Tape Drives LTO-1 Ultrium 232 LTO-2 Ultrium 448 LTO-3 Ultrium 920 LTO-3 Ultrium 960 LTO4 Ultrium 1760 LTO-4 Ultrium 1840 DAT 40 DAT 72 DAT 160	Internal or External	HP SC11Xe Host Bus Adapter HP U320e SCSI Dual Channel Controller NOTE: Please check the full compatibility information at: http://www.hp.com/go/connect	412911-B21 AH627A
HP StorageWorks SCSI Rack Mount Kits 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter	412911-B21
HP StorageWorks USB Tape Drives DAT 40 DAT 72 DAT 160 DAT 320	Internal or External	USB 2.0 Port	N/A
HP StorageWorks USB Rack Mount Kits 1U USB Rack-Mount Kit	External	USB 2.0 Port	
HP StorageWorks SAS Tape Drives DAT 160 DAT 320 LTO-2 Ultrium 448 LTO-3 Ultrium 920	Internal or External	HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller NOTE: Please check the full compatibility information at: http://www.hp.com/go/connect	462828-B21

Storage

LTO-4 Ultrium 1760
LTO-4 Ultrium 1840
LTO-5 Ultrium 3000
LTO-5 Ultrium 3280

HP StorageWorks SAS Rack Mount Kits 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller NOTE: Please check the full compatibility information at: http://www.hp.com/go/connect	462828-B21
HP StorageWorks SCSI Tape Autoloaders DAT 72x10 Autoloader 1/8 G2 Autoloader	External	HP SC11Xe Host Bus Adapter HP U320e SCSI Dual Channel Controller	412911-B21 AH627A
HP StorageWorks SCSI Tape Libraries MSL2024 MSL4048 MSL8096 MSL6000	External	HP StorageWorks U320e SCSI Dual Channel Host Bus Adapter NOTE: Please check the full compatibility information at: http://www.hp.com/go/connect	AH627A
HP StorageWorks SAS Tape Autoloaders and Libraries 1/8 G2 Autoloader MSL2024 MSL4048 MSL8096	External	HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller NOTE: Please check the full compatibility information at: http://www.hp.com/go/connect	462828-B21
HP StorageWorks Fibre Channel Tape Libraries MSL2024 MSL4048 MSL8096 MSL6000	External	Please consult the EBS connectivity matrix at: http://www.hp.com/go/ebs for connectivity information and the supported Fibre Channel HBAs shown in this QuickSpec.	
HP StorageWorks USB RDX Removable Disk Backup System RDX160 RDX320 RDX500 RDX750 RDX1TB	Internal or External	USB 2.0 port	N/A

Storage

HP StorageWorks D2D Backup Systems, iSCSI D2D2500i D2D4000i	External	Embedded Network Controller. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.
HP StorageWorks D2D Backup Systems, Fibre Channel D2D4000fc	External	Direct server attach is not supported, requires connection via SAN fabric. See: http://www.hp.com/go/connect

Power Specifications

HP 460W Common Slot Gold Hot Plug Power Supply Kit							
Part Number	503296-B21						
Input Voltage Range (Vrms)	100 to 240						
Frequency Range (Nominal) (Hz)	50/60						
Nominal Input Voltage (Vrms)	100	120	200	208	220	230	240
Maximum Rated Output Wattage Rating	460	460	460	460	460	460	460
Nominal Input Current (A rms)	5.5	4.5	2.6	2.5	2.4	2.3	2.2
Maximum Rated Input Wattage Rating (Watts)	526	520	505	505	503	503	503
Maximum Rated VA (Volt-Amp)	548	542	527	527	524	524	524
Efficiency (%)	87.5	88.5	91	91	91.5	91.5	91.5
Power Factor	0.97						
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30						
Maximum Inrush Current duration (mS)	20						
Maximum British Thermal Unit Rating (BTU-Hr)	1794	1773	1725	1725	1715	1715	1715

HP 750W Common Slot Gold Hot Plug Power Supply Kit							
Part Number	512327-B21						
Input Voltage Range (Vrms)	100 to 240						
Frequency Range (Nominal) (Hz)	50/60						
Nominal Input Voltage (Vrms)	100	120	200	208	220	230	240
Maximum Rated Output Wattage Rating	750	750	750	750	750	750	750
Nominal Input Current (A rms)	8.9	7.4	4.3	4.1	3.9	3.7	3.6
Maximum Rated Input Wattage Rating (Watts)	857	847	824	825	820	820	820
Maximum Rated VA (Volt-Amp)	894	884	859	859	854	854	854
Efficiency (%)	87.5	88.5	91	91	91.5	91.5	91.5
Power Factor	0.97						
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30						
Maximum Inrush Current duration (mS)	20						
Maximum British Thermal Unit Rating (BTU-Hr)	2925	2892	2812	2812	2797	2797	2797

Power Specifications

HP 1200W Common Slot Silver Hot Plug Power Supply Kit							
Part Number	500172-B21						
Input Voltage Range (Vrms)	100 to 240						
Frequency Range (Nominal) (Hz)	50/60						
Nominal Input Voltage (Vrms)	100	120	200	208	220	230	240
Maximum Rated Output Wattage Rating	800	900	1200	1200	1200	1200	1200
Nominal Input Current (A rms)	9.7	9.0	7.0	6.8	6.4	6.1	5.9
Maximum Rated Input Wattage Rating	930	1034	1348	1348	1348	1348	1348
Maximum Rated VA (Volt-Amp)	970	1079	1406	1406	1406	1406	1406
Efficiency (%)	86	87	89	89	89	89	89
Power Factor	0.97						
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30						
Maximum Inrush Current duration (mS)	20						
Maximum British Thermal Unit Rating (BTU-Hr)	3174	3530	4600	4600	4600	4600	4600

NOTE: To review typical system power ratings use the HP Power Advisor which is available online located at url: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor.
NOTE: Option Kits contain optional power supply, an IEC power cable and PDU IEC cables.

System Unit	Tower Dimensions (H x W x D) (with feet/bezel)	18.5 x 8.59 x 23.46 in (47 x 21.8 x 59.6 cm)	
	Rack Dimensions (H x W x D) (with feet/bezel)	8.54 x 17.5 x 21.9 in. (21.7 x 44.5 x 55.7cm)	
	Tower Weight (approximate)	Maximum (all hard drives, power supplies, and processors installed)	70 lb (31.8 kg)
		Minimum (one hard drive, power supply, and processor installed)	54 lb (24.5 kg)
	Rack Weight (approximate)	Maximum (all hard drives, power supplies, and processors installed)	66 lb (29.9 kg)
		Minimum (one hard drive, power supply, and processor installed)	48 lb (21.8 kg)
	Input Requirements (per power supply)	Rated Line Voltage	100 to 240 VAC
		Rated Input Current	7.1 Amps (at 120VAC) to 3.5 Amps (at 240 VAC)
		Rated Input Frequency	50 to 60 Hz
		Rated Input Power	852 W
	BTU Rating	Maximum	460W - 1773 BTU / hr (at 120 VAC), 1715 (at 240 VAC) 750W - 2892 BTU / hr (at 120 VAC), 2797 (at 240 VAC) 1200W - 3530 BTU / hr (at 120 VAC), 4600 (at 240 VAC)
	Power Specifications	To review typical system power ratings use the HP Power Advisor which is available via the online tool located at URL: www.hp.com/go/proliant-energy-efficient - Click on the system of interest. Example: ML350 G6 - Follow the instructions of the next screens.	
	Power Supply Output (per power supply)	Rated Steady-State Power	460(750) W (at 100 VAC), 460(750) W (at 200 VAC)
		Maximum Peak Power	460(750) W (at 100 VAC), 460(750) W (at 200 VAC) NOTE: See Power Supply Specifications tables for complete details on 460W PSU and optional 750W and 1200W Power Supply Options.
	System Inlet Temperature	Operating	10° to 35°C (50° to 95°F) at sea level with an

		altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).
	Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
Relative Humidity (non-condensing)	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
	Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
Altitude	Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
Acoustic Noise	Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).	
	Idle	
	L WAd	4.7 B (1P Non-Redundant) 4.6 B (2P Redundant)
	L pAm	32.48dB (1P Non-Redundant) 31.18dB (2P Redundant)
	Operating	
	L WAd	4.8 B (1P Non-Redundant) 4.7 B (2P Redundant)
	L pAm	32.39dB (1P Non-Redundant) 31.62dB (2P Redundant)
	NOTE: The Listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.	
Emissions Classification (EMC)	FCC Rating	Class B
	Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1

NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.

Smart Array P410i Controller	Dimensions	Embedded
	Disk Drive and Enclosure Interface - Transfer rate	6Gb/s SAS (Serial Attached SCSI) 3Gb/s SATA (Serial ATA)
	SAS Connectors	2 internal 4X connectors
	Cache Memory Speed	DDR2-800MHz with 40 or 72-bit wide bus
	Server Interface	x4 PCIe 2.0 provides 2GB/s maximum bandwidth
	SAS Speed	8 6Gb/s SAS links provide 4.8GB/s maximum bandwidth
	Cache Memory	Zero Memory RAID has no cache memory 40-bit 256MB ECC protected cache (battery upgrade available) 72-bit 512MB BBWC or 72-bit 512MB and 1G FBWC
	Logical Drives Supported	Zero Memory, Up to 2 logical volumes (8 physical drives) Up to 64 logical drives with cache
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	RAID Support	RAID 6, 6+0 (Advanced Data Guarding) NOTE: RAID 6, 6+0 can be enabled with one of the following combinations: • 256 MB cache, Battery kit and Smart Array Advanced Pack License key option upgrades • 512 MB BBWC/FBWC and Smart Array Advanced Pack License key option upgrades • 1G FBWC and Smart Array Advanced Pack License key option upgrades RAID 5, 5+0 (Distributed Data Guarding) NOTE: A minimum or 256 MB cache is required to enable RAID 5, 5+0 support RAID 1+0 (Striping & Mirroring) RAID 0 (Striping), RAID 1 (Mirroring)

Technical Specifications

Embedded NC326i PCI Express Dual Port Gigabit Server Adapter	Network Interface	10Base-T/100Base-TX/1000Base-TX	
	Compatibility	IEEE 802.3 10Base-T	
		IEEE 802.3ab 1000Base-T	
		IEEE 802.3u 100Base-TX	
	Data Transfer Method	PCI Express, four lanes (x4)	
	Controller	BCM5715	
	Network Transfer Rate	10Base-T (Half-Duplex)	10 Mb/s
		10Base-T (Full-Duplex)	20 Mb/s
		100Base-TX (Half-Duplex)	100 Mb/s
		100Base-TX (Full-Duplex)	200 Mb/s
		1000Base-TX (Half and Full-Duplex)	2000Mb/s
	Connector	RJ-45	
	Cable Support	10Base-T	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)
		10/100/1000Base-TX	Category 5 UTP; up to 328 ft (100 m)

Environment-friendly Products and Approach	End-of-life Management and Recycling	Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

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For hard drives, 1GB = 1 billion bytes. Actual formatted capacity is less.